16TH **GLOBAL** CONFERENCE ON **ENVIRONMENTAL TAXATION**

Green Fiscal Reform: Protecting our Natural Resources for a Sustainable Future

23-26 September 2015. University of Technology Sydney

CONFERENCE PROGRAMME

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16TH GLOBAL CONFERENCE ON ENVIRONMENTAL TAXATION

Green Fiscal Reform: Protecting our Natural Resources for a Sustainable Future

23 - 26 September 2015, Sydney Australia

UTS
UNIVERSITY OF TECHNOLOGY, SYDNEY

Data Sheet

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CPA Australia

Website:www.cpaaustralia.com.au

CPA Australia is one of the world's largest accounting bodies with a global membership of more than 150,000 members working in 120 countries around the world, with more than 25,000 members working in senior leadership positions.

Our core services to members include education, training, technical support and advocacy. Employees and members work together with local and international bodies to represent the views and concerns of the profession to governments, regulators, industries, academia and the general public.

Contents

Welcome to GCET16

Welcome to Sydney, Australia. Your host is the University of Technology Sydney (UTS), a dynamic and innovative university in central Sydney. One of Australia's leading universities of technology, UTS has a distinct model of learning, strong research performance and a leading reputation for engagement with industry and the professions. UTS has a culturally diverse campus life and vibrant international exchange study and research programs that prepare graduates for the workplaces of today and the future. Our City campus is in the heart of Sydney's creative precinct and alongside Sydney's central business district. Over the next six years, our City Campus Master Plan will deliver a state-of-the-art campus to meet the needs of 21st century students.

Our Strategic Plan outlines our vision to be a world leading university of technology and provides a strong statement about UTS's aspirations for our third decade. UTS is part of the Australian Technology Network of universities: a group of five prominent universities committed to working with industry and government to deliver practical and professional courses. With a total enrolment of over 37,000 students, UTS is one of the largest universities in Australia.

The UTS members of the Organising Committee are proud to be working with our colleagues at the University of New South Wales (UNSW), Macquarie University and The University of Sydney to bring to you the 16th Global Conference on Environmental Taxation (GCET16).

The theme for this year's Conference is *Green Fiscal Reform: Protecting our Natural Resources for a Sustainable Future*. This theme is designed to place greater focus on natural resource protection, a theme that has received less explicit attention in past conferences. It also emphasises an area of great concern to the host country, Australia.

More than 75 abstracts have been accepted for GCET16 parallel sessions and our distinguished keynote and plenary speakers are covering topics from biodiversity, carbon regulation and pricing, emissions trading and Indigenous carbon farming, renewable energy and innovation as well as the road to Paris. As was done last year, we too have *planned the sessions to have time for questions and debate and encourage all participants, whether presenting or not, to react and engage in a spirit of openness, dialogue and mutual understanding*.

This year we have introduced two initiatives. The first is a PhD afternoon where PhD candidates are able to present their research and obtain targeted and comprehensive advice from globally recognised experts. Accordingly, we encourage as many senior delegates as possible to participate in the PhD afternoon on Wednesday 23 September 2015.

The second initiative is the Saturday Roundtable which, this year, is focussing on the topic of *Evaluation Criteria for Environmental Tax Measures*. Delegates will be actively participating in a joint research project between UTS and UNSW through the mechanism of a *Delphi study* with the intention of developing a globally relevant framework for evaluating environmental tax measures. We encourage all delegates to participate in this study and the Roundtable and hope that this concept of engagement will be continued in future GCET conferences.

We are delighted to host the conference in Sydney, Australia and appreciate this significant opportunity to join forces between UTS, UNSW, Macquarie and Sydney Universities. We wish you an enjoyable stay in Sydney, with an opportunity to contribute to enlightened analysis of tax policy, participate in lively debate and discussion, while catching up with old friends and forging new friendships.

GCET16 Conference Committee

Conference Chair
Professor Natalie P Stoianoff
Faculty of Law
University of Technology Sydney

Professor Suzanne Benn
UTS Business School
University of Technology Sydney

Associate Professor Damien Giurco
Institute of Sustainable Futures (ISF)
University of Technology Sydney

Dr. David Leary
Faculty of Law
University of Technology Sydney

Dr. Sophie Riley
Faculty of Law
University of Technology Sydney

Associate Professor Hope Ashiabor
Faculty of Business and Economics
Macquarie University

Bill Butcher
School of Taxation and Business Law
University of New South Wales

Associate Professor Celeste Black
Sydney Law School
University of Sydney

MESSAGE FROM THE PREMIER

I am pleased to welcome delegates to the 16th Global Conference on Environmental Taxation hosted by the University of Technology Sydney.

It is fitting that Sydney is the 2015 host city for this conference. The NSW Government is committed to sustainable economic growth in our state and has used market instruments to achieve environmental outcomes for a number of years. NSW is continually looking for innovative policy mechanisms that encourage people and businesses to value and protect our unique natural environment.

NSW uses economic measures and tradeable emission schemes to reduce pollution loads. One scheme operating in NSW is the Load-Based Licensing Scheme. This requires certain commercial and industrial facilities licensed by the Environment Protection Authority to pay part of their licence fees based on the pollutant loads of their activities.

Another NSW initiative is the NSW Biodiversity Banking and Offsets Scheme, or BioBanking Scheme, which will be showcased during one of the Friday plenary sessions.

The BioBanking Scheme is a market-based scheme that uses the trading of credits to positively influence development. In the scheme, landowners receive ongoing funds to manage conservation values in perpetuity. By committing to the BioBanking Scheme, landholders can generate credits by improving and protecting biodiversity values on their land. The credits generated can then be sold to developers, who need to offset the biodiversity impacts of their development, or to people who want to invest in conservation.

The 16th Global Conference on Environmental Taxation brings together some of the best economic and policy minds in the world to discuss how economic instruments can promote environmental outcomes.

I hope each conference delegate enjoys their time in Sydney and I look forward to hearing about the ideas discussed in this forum.

MIKE BAIRD MP
Premier

THE LORD MAYOR OF SYDNEY
CLOVER MOORE

1 May 2015

Message of Welcome from the Lord Mayor of Sydney

16th Global Conference on Environmental Taxation (GCET16)
23-26 September 2015

I'm pleased to officially welcome attendees of the 16th Global Conference on Environmental Taxation (GCET16) to be held in Sydney on 23-26 September 2015.

I commend the University of Technology, Sydney for convening this conference. This event is an important forum for discussing the principles and practices of environmental taxation, bringing together professionals from around the world and from diverse backgrounds to share their expertise and experiences.

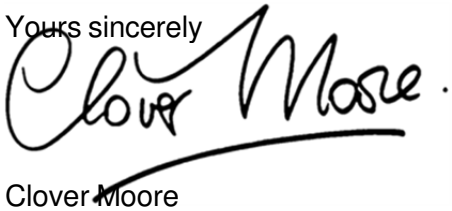
This year's conference theme of 'Green Fiscal Reform: Protecting our Natural Resources for a Sustainable Future' is a timely one and particularly relevant for Australia and specifically for Sydney.

The City of Sydney was the first local council in Australia to be certified as carbon neutral under the National Carbon Offset Standard. Our vision for the future, *Sustainable Sydney 2030*, sets out an ambitious program that will ensure we remain one of the world's top destinations, including a target to reduce greenhouse gas emissions 70 per cent by 2030 on 2006 levels. Between 2006 to 2012, greenhouse gas emissions from the City of Sydney local government area fell by seven per cent whilst employment increased by 17 per cent and the number of new businesses grew by 13 per cent.

However, we still have much work to do. I hope the conference generates productive debate, and advances knowledge and understanding around natural resource protection. I look forward to hearing about the outcome of the conference.

On behalf of the City of Sydney, I wish you every success for the 16th Global Conference on Environmental Taxation and I hope you enjoy your stay in our beautiful harbourside city.

Yours sincerely



Clover Moore
Lord Mayor of Sydney

Sydney Town Hall
483 George Street Sydney NSW 2000
Phone 02 9265 9229 Fax 02 9265 9328
cmoore@cityofsydney.nsw.gov.au

Sustainable Sydney 2030
The time for action on climate change is now

UNIVERSITY OF TECHNOLOGY, SYDNEY

25 August 2015

Professor Attila Brungs
Vice-Chancellor & President
City Campus
PO Box 123 Broadway
NSW 2007 Australia
T: +61 2 9514 1333
attila.brungs@uts.edu.au
www.uts.edu.au
UTS CRICOS PROVIDER CODE 00099F

Message of Welcome from the Vice Chancellor,
University of Technology Sydney

16th Global Conference on Environmental Taxation (GCET16)
23-26 September 2015

I am delighted that UTS is hosting the 16th Global Conference on Environmental Taxation (GCET16) on 23-26 September 2015 and welcome the delegates, many who have travelled from all parts of the globe to be here.

This conference series is the leading global forum for exchanging insights and experiences on the use of market instruments such as taxation measures to address the challenge of achieving environmental sustainability and a greener economy. Professionals from around the world and from diverse backgrounds will be coming together in Sydney with the primary objective of advancing knowledge, understanding and debate rather than promote any particular environmental agenda.

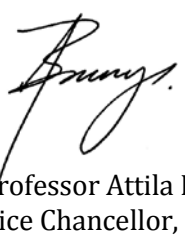
This year's conference theme of 'Green Fiscal Reform: Protecting our Natural Resources for Sustainable Future' is of particular relevance for Australia, and UTS has its own Environmentally Sustainable Development (ESD) Master Plan which is central to UTS's commitment to a 30% reduction in greenhouse gases by 2020-21.

In addition to being a founding member of the Green Building Council of Australia, 'Sustainability and the Built Environment' is one of the key research strengths of UTS providing expertise through the Centre for Environmental Sustainability, Centre for Technology in Water and Wastewater, and the Institute for Sustainable Futures, to mention a few, as well as the specialist grouping of environmental law researchers in the Faculty of Law convening this conference.

As the research presented at the previous fifteen conferences has helped provide a much stronger theoretical and empirical underpinning of the legal, economic and behavioural issues in this field, I have high expectations that GCET16 will add to the richness of that research and look forward to reading about the outcomes in the conference publication, Critical Issues in Environmental Taxation.

On behalf of UTS, I wish you every success for the 16th Global Conference on Environmental Taxation and I hope you enjoy your stay in Sydney.

Yours sincerely,



Professor Attila Brungs
Vice Chancellor, UTS

Venue: UTS Faculty of Law

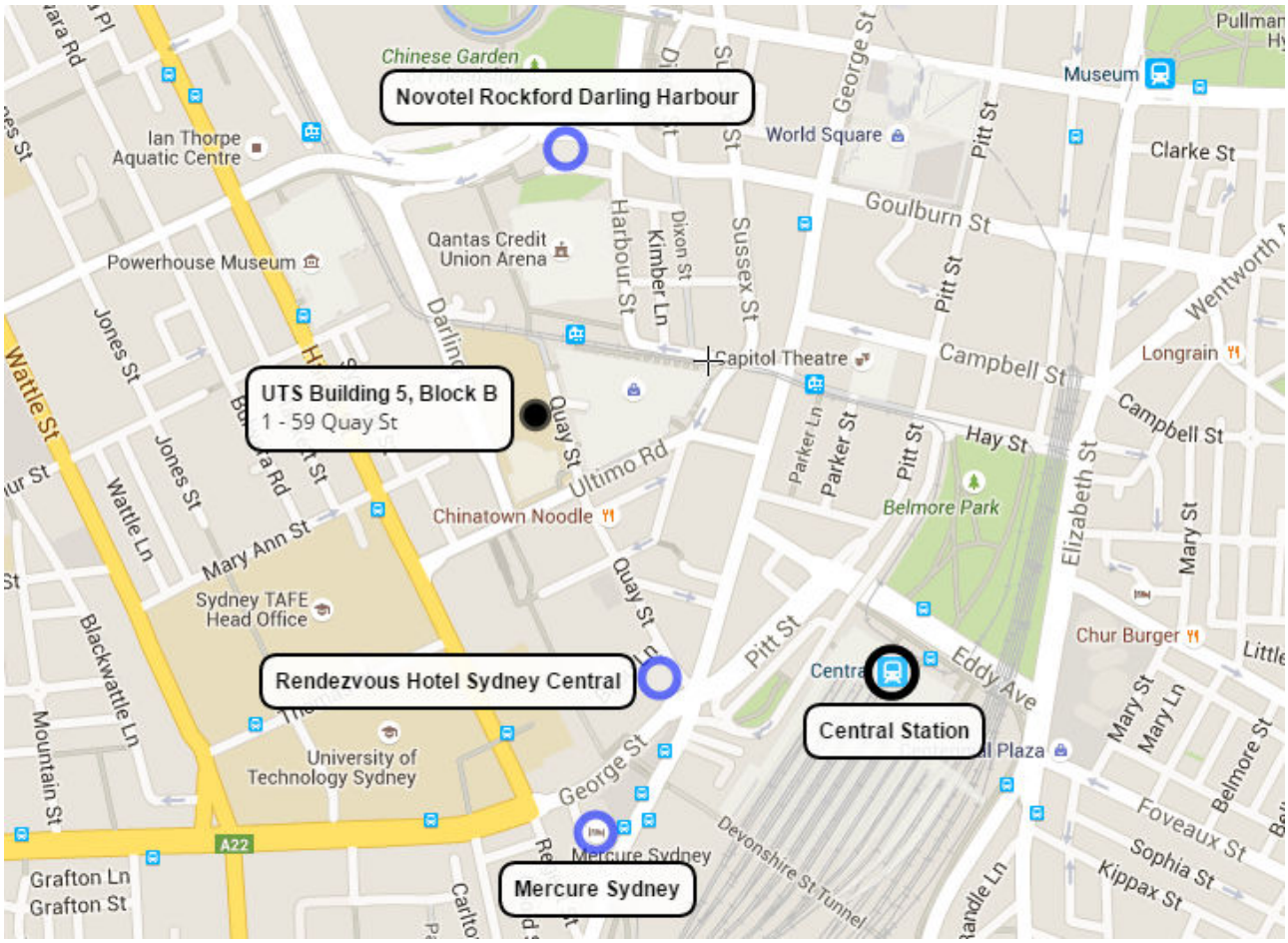
UTS Faculty of Law
Building 5, Block B
1-59 Quay Street, Haymarket
Sydney, New South Wales 2007

Getting to the venue

Train stations - UTS City Campus is right next to Central station, the hub of all train lines in Sydney, as well as Railway Square, a major bus interchange.

Parking - Other than parking for people with disabilities and those with special permits, parking at the UTS City Campus is limited to street meter parking and user pay parking stations. A pay parking station is located directly opposite Building 5, Block B, in Quay Street. Park on the levels designated as Student Parking and validate your parking ticket at the UTS Library in Building 5, Block A for a reduced parking rate.

More information about getting around the area is available at http://www.transport.nsw.gov.au/

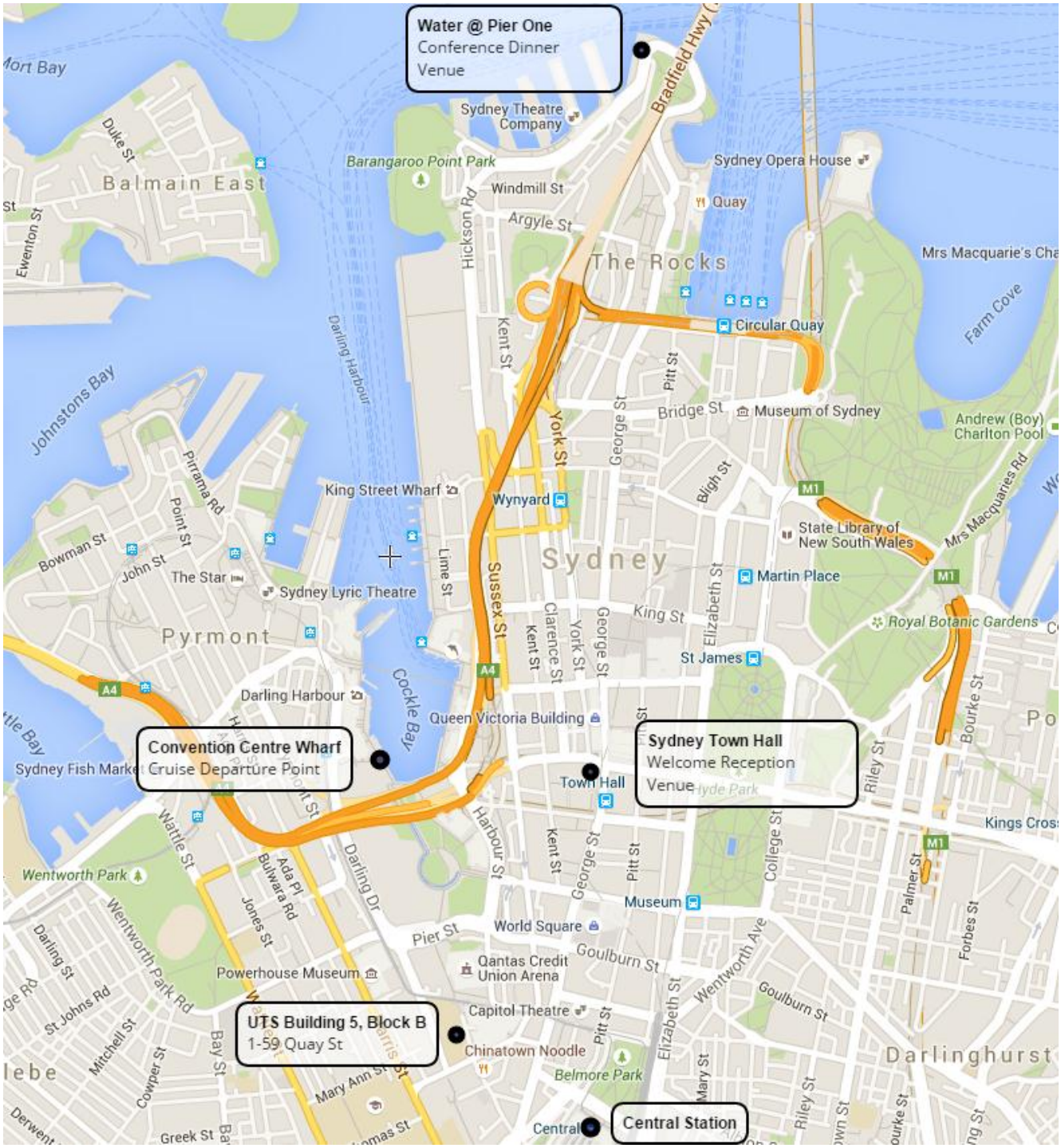


Sydney Inner City Map

Sydney is the capital of New South Wales and is one of Australia's largest cities.

Sydney is best known for its harbourfront Opera House, with its distinctive sail-like design. Darling Harbour and Circular Quay are hubs of waterside life, with the towering, arched Harbour Bridge and esteemed Royal Botanic Gardens nearby.

Visit Sydney Tower's 268m glass viewing platform and the Skywalk offering 360-degree views of the city, harbour and suburbs.



Social Programme

Welcome Reception on 23 September

Welcome Reception by Lord Mayor of Sydney at Sydney Town Hall.

Time: 18:00 – 20:00 hours

Location Details:
Sydney Town Hall
483 George Street Sydney NSW 2000
Phone: +61 2 9265 9229

Sydney Harbour cruise and transfer to Conference Dinner 24 September

18.15 Meet at the front of UTS, Building 5, Block B to walk to the wharf.

18.30 Departures from the Convention Centre Wharf, Darling Harbour

Time: 18:30 – 19:15 hours

Location details:
Captain Cook Cruises
Convention Centre Wharf, near Harbourside Shopping Centre, Darling Harbour

Conference Dinner 24 September

The cruise will culminate at the conference dinner venue Water @ Pier One Sydney Harbour.

Time: 19:30 – 22:30 hours

Location Details:
Pier One Sydney Harbour
11 Hickson Road, Walsh Bay, Sydney
Phone: +61 2 8298 9999

Buses will return dinner attendees to UTS Building 5 departing the dinner location at 22.00 and then 22.30.

Registration and Information

The registration desk will be open:
Wednesday 23rd September 12pm to 5pm at the University of Technology Sydney
Wednesday 23rd September 6pm to 8pm at Sydney Town Hall
Thursday 24th September 8am to 4pm at the University of Technology Sydney
Friday 25th September 8am to 4pm at the University of Technology Sydney
Saturday 26th September 8:30am to 11am at University of Technology Sydney

Conference Name Tag
A Conference name tag will be provided at registration and ensures your admission to the conference. Please make sure you wear it at all times!

Programme changes and message board
General announcements, changes and updates to the program will be displayed at the Registration desk and outside each meeting room.

WI-FI access
Wireless network name: GCET16
The above Wi-Fi network is available during the conference. Login details will be provided at the registration desk.

Catering
All coffee breaks and lunch will be served in the Foyer area on Level 1 near the registration desk.

General Information:

Important telephone numbers:	Police, Ambulance or Fire emergency call **000**
Plan your trip around Sydney:	http://www.transport.nsw.gov.au/
Sydney Airport:	http://www.sydneyairport.com.au/
Sydney Visitor Information:	http://www.sydney.com.au/
Taxi Service:	http://www.nswtaxi.org.au/passengers/book-a-taxi

UTS Emergency Procedures

EMERGENCY PROCEDURES

ADDRESS: 1-59 QUAY STREET, HAYMARKET, NSW 2000
CROSS STREET: QUAY STREET AND ULTIMO ROAD

WHEN YOU HEAR THE ALERT SIGNAL

BEEP... BEEP... BEEP...

- Shut down or secure machinery and computers
- Prepare to Evacuate
- Check if anyone around you needs assistance
- If danger is present, evacuate immediately

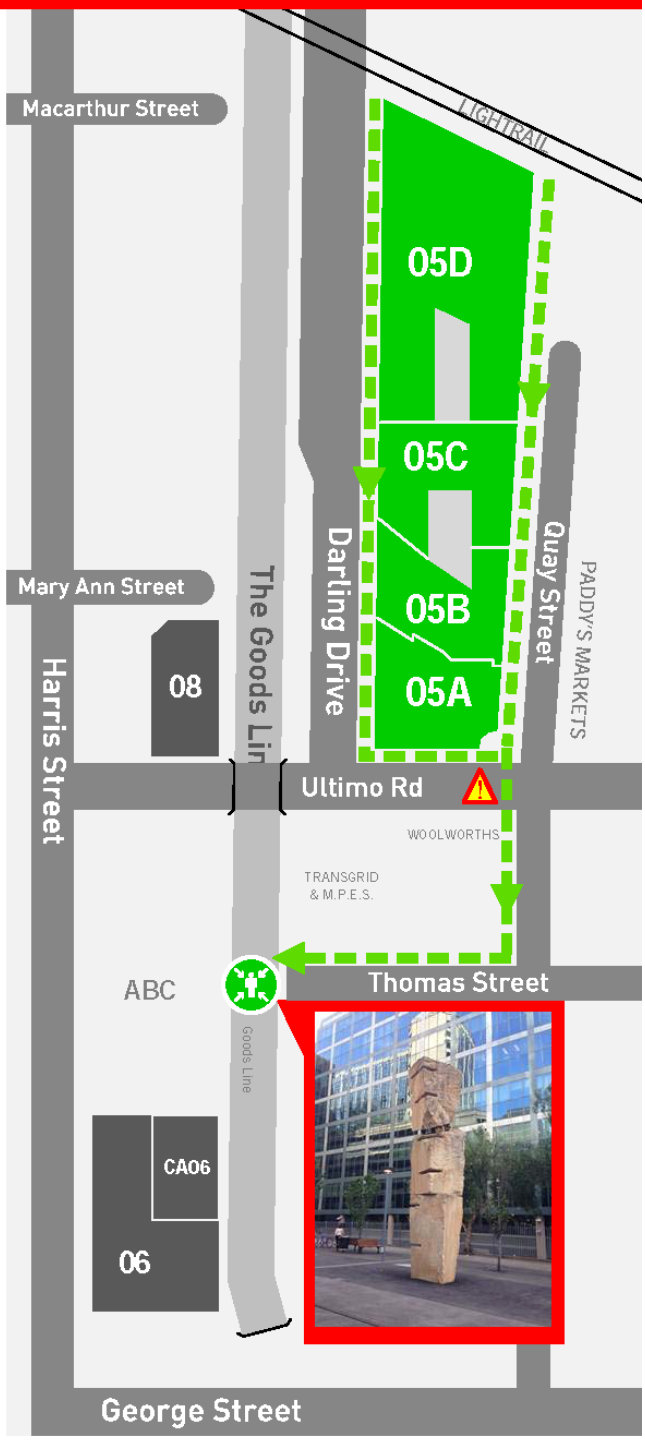
WHEN YOU HEAR THE EVACUATION SIGNAL

WHOOP... WHOOP... WHOOP...

- Evacuate immediately
- A public announcement may tell you to:
  "EVACUATED AS DIRECTED"
- Leave the building via the nearest fire exit
- Do not use lifts
- Follow the directions of Emergency Services, Wardens and Security Staff
- Provide assistance to others where required
- Proceed to the assembly area
- Do not return to the building until told it is safe to do so by UTS Security Staff

WHEN INSTRUCTED TO SHELTER IN PLACE

- Listen for instructions
- Secure your immediate environment by locking doors if safe to do so
- Keep others away from public areas such as foyers and hallways
- Silence Mobile Phones, and turn off Machinery and Audio-Visual equipment if possible.
- Close all windows, blinds and curtains
- Move away from the doors and windows, remain quiet and stay there until told otherwise by Police or UTS Security
- Provide assistance to others where required
- Follow the directions of Emergency Services, Wardens and Security Staff



IN AN EMERGENCY – DIAL '6'

OR 1800 249 559

> Emergency 000
> Emergency TTY 106

Security Enquiries

BROADWAY: 02 9514 1192 HAYMARKET: 02 9514 3399

Presenters' instructions

Presentation technology
A computer and projector will be available in each meeting room for presentations.

Please use PowerPoint for your presentation and set the screen ratio format to 4:3.

Please save the presentation file as ***Surname_Firstname*** for identification purposes.

Presenters are requested to email their presentation and any accompanying video or YouTube files to gcet16@catalystevents.com.au ***by Monday 14th September 2015***, in order that all presentations can be checked and preloaded onto the meeting room computer ahead of the start of each conference day.

If you have any difficulties in meeting this deadline, please liaise with our Event Manager, Sarah Dixon, on gcet16@catalystevents.com.au or +61 (0) 401 716 657.

Please ensure that a backup copy of the presentation and any accompanying video files are brought along to the Conference on a USB stick.

Please note: Use of personal laptops cannot be accommodated by onsite IT for presentations.

Duration
The time available for each presentation is 15 - 20 minutes. As a general rule, the remaining time will be for questions and general discussion.

Presenters
Presenters are requested to come to the assigned meeting room 10 minutes prior to the start of the session to meet the Chair of the session and double check their presentation is preloaded.

Session Chairs
Session Chairs are also requested to come to the assigned meeting room 10 minutes prior to the start of the session to meet the presenters in that session.

The Session Chair's responsibilities include introducing the session and the speakers, ensuring that the time is equally divided across all presentations, keeping the session to time, and guiding the general discussion.

Programme

GCET16 Programme at a Glance

Wednesday 23rd September 2015 - PhD Half Day		**Location**
13:30 - 15:00	**PhD Presentations Session I**	Moot Court, Level 1
15:00 - 15:30	*Tea and coffee break*	*Foyer, Level 1*
15:30 - 17:00	**PhD Presentations Session II**	Moot Court, Level 1
18:00 – 20:00	***Welcome Reception** by Deputy Lord Mayor of Sydney* *Keynote Speaker: **Councillor Robyn Kemmis***	*Sydney Town Hall*

Thursday 24th September 2015		
9:00 - 9:30	**Welcome Ceremony**	Moot Court, Level 1
9:30 - 10:45	**Opening Plenary** **Professor Ross Garnaut AO,** University of Melbourne *The Essential Role of Carbon Pricing* **Chloe Munro,** Chair & Chief Executive Officer of Clean Energy Regulator *Institutional foundations for effective carbon emissions and renewable energy regulation and taxation in Australia*	Moot Court, Level 1
10:45 - 11:15	*Tea and coffee break*	*Foyer, Level 1*
11:15 - 12:45	**Parallel sessions I**	
	Green fiscal reform	B317, Level 3
	Biodiversity protection	B318, Level 3
	Environmental stewardship	B327, Level 3
	Market Instruments	B329, Level 3
12:45 - 14:15	*Lunch*	*Foyer, Level 1*
14:15 - 15:30	**Plenary 2** **Hugo Llorens,** Consul General of Consulate General of United States in Sydney *The U.S. Perspective on the Clean Energy Revolution* **Adam Awty,** Chief Operating Officer Commercial, CPA Australia *Transforming the Australian Accounting Profession for the Carbon Challenge* **Martijn Wilder AM,** Head of Global Environmental Markets, Baker & McKenzie *The Road to Paris and the Critical Nature of Intended Nationally Determined Contributions (INDCs)*	Moot Court, Level 1
15:30 - 16:00	*Tea and coffee break*	*Foyer, Level 1*
16:00 - 17:30	**Parallel sessions II**	
	Green fiscal reform	B317, Level 3
	Energy, Fuel and Carbon Pricing	B318, Level 3
	Renewable energy and innovation	B327, Level 3
	Market Instruments	B329, Level 3
18:15 - 18:30	Walk to wharf	In front of UTS Building 5, Block B
18:30 - 19:15	***Sydney Harbour Cruise**, drop off at dinner*	*Darling Harbour*
19.15 – 22:30	***Conference Dinner sponsored by CPA Australia at: Water*** *Keynote Speaker: **The Honourable Bob Carr*** *Professor and Director, Australia-China Relations Institute, University of Technology Sydney*	*Pier One Sydney Harbour, Walsh Bay*

Friday 25th September 2015		
9:15 - 10:45	**Plenary 3** **Gary Wells,** Chief Executive Officer, Nature Conservation Trust of NSW *A Practical Guide to Conservation Covenants* **David Lowe,** Chief Winemaker, Lowe Wines *Slow Farming in A Hurry* **John Seidel,** Principal Project Officer, NSW Office of Environment and Heritage *The NSW Biodiversity Banking and Offsets (Biobanking) program* **Samantha Daly,** Partner, McCullough Robertson *The new world of biobanking as a compulsory mechanism for mining related offsets – the good, the bad and the ugly*	Moot Court, Level 1
10.45 - 11.15	*Tea and coffee break*	*Foyer, Level 1*
11:15 - 12:45	**Parallel sessions III**	
	Green fiscal reform	B317, Level 3
	Natural Resources	B318, Level 3
	Renewable energy and innovation	B327, Level 3
	Market Instruments	B329, Level 3
12:45 - 14:00	*Lunch*	*Foyer, Level 1*
14:00 - 15:30	**Plenary 4** **Chas Roy-Chowdhury ,** Head of Taxation, ACCA *Environmental Taxes – Destination Europe* **Peter Cosier,** Director & Founding Member, Wentworth Group of Concerned Scientists *Using markets for a healthy environment in a productive economy* **Dr. Anne Poelina,** Managing Director, Madjulla Incorporated *A Case Study for Environmental Tax Offsets : Collaboration of Indigenous Science and Western Science to Value and Protect Cultural and Geo heritage Landscapes as Culture, Science and Conservation (Green) Economies* **Nils Axel Braathen,** Principal Administrator, Environment Directorate, OECD *Some steps towards setting Pigouvian tax rates*	Moot Court, Level 1
15:30 - 16:00	*Tea and coffee break*	*Foyer, Level 1*
16.00 - 17:30	**Parallel sessions IV**	
	Green fiscal reform	B317, Level 3
	Environmental stewardship	B318, Level 3
	Market Instruments	B329, Level 3
	Night at Leisure / Catching up with Friends	

Saturday 26th September 2015 – Roundtable		
9:00 - 10:30	**Roundtable – Evaluation Criteria for Environmental Tax Measures**	Moot Court, Level 1
10:30 - 11:00	*Tea and coffee break*	*Foyer, Level 1*
11:00 - 12:30	**Roundtable continues with Group Delphi Study**	Moot Court, Level 1
12:30 - 12:40	Next Year's Conference: GCET17	Moot Court, Level 1
12:40 - 13:00	Closing Ceremony	Moot Court, Level 1

Parallel Sessions Overview

Room	Parallel Sessions I 24th Sept. 11.15-12.45	Parallel Sessions II 24th Sept. 16.00-17.30	Parallel Sessions III 25th Sept. 11.15-12.45	Parallel Sessions IV 25th Sept. 16.00-17.30
B317	**GREEN FISCAL REFORM** (A)	**GREEN FISCAL REFORM** (E)	**GREEN FISCAL REFORM** (I)	**GREEN FISCAL REFORM** (M)
B318	**BIODIVERSITY PROTECTION** (B)	**ENERGY, FUEL AND CARBON PRICING** (F)	**NATURAL RESOURCES** (J)	**ENVIRONMENTAL STEWARDSHIP** (N)
B327	**ENVIRONMENTAL STEWARDSHIP** (C)	**RENEWABLE ENERGY AND INNOVATION** (G)	**RENEWABLE ENERGY AND INNOVATION** (K)	**NO SESSION**
B329	**MARKET INSTRUMENTS** (D)	**MARKET INSTRUMENTS** (H)	**MARKET INSTRUMENTS** (L)	**MARKET INSTRUMENTS** (O)

GCET16 Detailed Programme

Wednesday 23rd September 2015 - PhD Half Day		Location
13:30-15:00	**PhD Presentations Session I** Chair: Dr. David Leary (Australia) **The Renewable Energy Target in Australia: The Rationales, Schemes, Effects and Costs** *Chattaporn Harabut, University of Western Sydney (Australia)* **Implementation of Public Participation in Renewable Energy Projects** *Yankun Zhao, University of New South Wales (Australia)* **Restriction of WTO rules to Renewable Energy Subsidies** *Selina Cheng, University of New South Wales (Australia)*	Moot Court, Level 1
15:00-15:30	*Tea and coffee break*	*Foyer, Level 1*
15:30-17:00	**PhD Presentations Session II** Chair: Associate Professor Celeste Black (Australia) **Is the Aviation Sector the Lucky "bad guy" in the Fight Against Climate Change? Some Fiscal and Economic Thoughts** *Alice Pirlot, Université Catholique de Louvain (Belgium)* *Sébastien Wolff, Université Catholique de Louvain (Belgium)* **Economic Instruments in NSW Pollution Law: A Case for Greater Use and Refinement** *Sarah Wright, University of Wollongong (Australia)* **Investigating Carbon Price Effects on Trade-Offs Between Heating Space Production System and Building Thermal Insulation: a French Case Study over the 2015-2030 Period** *Jérémy El Beze, Paris Dauphine University (France)* **The efficiency of green economic instruments in Mexico, Brazil, Colombia, Venezuela and Panama facing globalization: A shared experience** *Heidi Orfilda de la Paz Miranda, Edgar Athzel Carmona Arias & Barbara Edith Orihuela , Universidad Autonoma del Estado de Morelos / Consejo Nacional de Ciencia y Technologia (Mexico)*	Moot Court, Level 1
18:00 – 20:00	***Welcome Reception** by Deputy Lord Mayor of Sydney* ***Councillor Robyn Kemmis***	*Sydney Town Hall*

Thursday 24th September 2015		
9:00-9:30	**Welcome Ceremony** *Acknowledgement to Country* **Aunty Joan Tranter**, Elder in Residence Jumbunna Indigenous House of Learning, University of Technology Sydney *Welcome to the University of Technology Sydney* **Professor William Purcell**, Deputy Vice Chancellor International & External Engagement *Welcome to the Faculty of Law* **Professor Ana Vrdoljak**, Associate Dean Research	Moot Court, Level 1
9:30-10:45	**Opening Plenary** Chair: Professor Natalie P Stoianoff (Australia) **Professor Ross Garnaut AO,** University of Melbourne *The Essential Role of Carbon Pricing* **Chloe Munro,** Chair & Chief Executive Officer of Clean Energy Regulator *Institutional foundations for effective carbon emissions and renewable energy regulation and taxation in Australia.*	Moot Court, Level 1
10:45-11:15	*Tea and coffee break*	*Foyer, Level 1*
11:15-12:45	**Parallel sessions I**	
	Green fiscal reform Chair: Nils Axel Braathen (Norway) **Carbon tax and carbon sequestration payments: suggestions for a well-designed Green Fiscal Reform against global warming** *Cristina Brandimarte, ISTAT Italian National Institute of Statistics (Italy)* **The coordination of energy taxes and ETS** *Silvia Giorgi, Universita di Trento (Italy)* *Lorenzo del Federico, University of Chieti-Pescara (Italy)* **Mining the Air and Minding the Consequences: A Dark Cloud Tax** *Janet Milne, Vermont Law School (USA)*	B317, Level 3
	Biodiversity protection Chair: Wayne Gumley (Australia) **Protecting South Australia's Marine Biodiversity** *Karen Bubna-Litic, University of South Australia (Australia)* **Internalising Externalities in Market-Based Approaches to Pest Animal Control** *Sophie Riley & Natalie P Stoianoff, University of Technology Sydney (Australia)* **Rights and Obligations in an Open Arctic Ocean - Prospects and Future Challenges with Special Reference to Arctic Fisheries** *Waliul Hasanat & Guo Peiqing, University of Lapland (Finland)*	B318, Level 3
	Environmental stewardship Chair: Bill Butcher (Australia)	B327, Level 3

	Fighting for Water: Can Federal Market Instruments create a National Trading System in the United States? *Mona Hymel, University of Arizona (USA)* **A Tax Policy Incentive Policy to Support Water Conservation and Protect the Ecosystem** *Rahmat Tavallali, Walsh University (USA)* *Paul Lee, Cleveland State University (USA)* **The Role of Tax Incentives in Water Protection** *Deborah Jarvie, University of Lethbridge (Canada)*	
	Market Instruments Chair: Associate Professor Celeste Black (Australia) **Recasting the Discourse on Pricing Carbon: Australia** *Hope Ashiabor, Macquarie University, (Australia)* **Long Term Ecological Tax Reform – Taking the Pain Out of Effectively Steering Economies Towards Profitable Resource Productivity Gains** *Karlson (Charlie) Hargroves, Sustainability Policy Institute, Curtin University (Australia)* *Ernst von Weizsäcker, The Club of Rome (Switzerland)* **Carbon Trading or Carbon Tax: Which Is the More Feasible Solution to Climate Change from the perspective of China?** *Mingde Cao, China University of Political Science and Law (China)* *Mingming Liu, Shandong University of Science and Technology (China)*	B329, Level 3
12:45-14:15	*Lunch*	*Foyer, Level 1*
14:15-15:30	**Plenary 2** Chair: Professor Mona Hymel (USA) **Hugo Llorens,** Consul General of Consulate General of United States in Sydney *The U.S. Perspective on the Clean Energy Revolution* **Adam Awty,** Chief Operating Officer Commercial, CPA Australia *Transforming the Australian Accounting Profession for the Carbon Challenge* **Martijn Wilder AM,** Head of Global Environmental Markets, Baker & McKenzie *The Road to Paris and the Critical Nature of Intended Nationally Determined Contributions (INDCs)*	Moot Court, Level 1
15:30-16:00	*Tea and coffee break*	*Foyer, Level 1*
16:00-17:30	**Parallel sessions II**	
	Green fiscal reform Chair: Professor Mikael Skou Andersen (Denmark) **Reforming Australia's Luxury Car Tax to Improve Vehicle Energy Efficiency** *Anna Mortimore, Griffith University (Australia)*	B317, Level 3

	Reducing emissions and promoting energy efficiency in residential homes through reform of environmental taxation legislation *Jon Truby, Qatar University (Qatar)* **The Impact of Environmental Tax on the Competitiveness and Behavior of Enterprises** *Jian Wu & Wang Xiao, Renmin University of China (China)*	
	Energy, Fuel and Carbon Pricing Chair: Dr. Yan Xu (Hong Kong) **Tax Fuel or Miles** *Roberta Mann, University of Oregon (USA)* **The Latest Trends in The Greening of the Tax Systems in Japan and Comparison with EU Countries** *Aya Naito & Yuko Motoki, Mizuho Information & Research Institute, Inc. (Japan)* **Australian Gas Resource - The Need for Regulatory and Fiscal Reform** *Prafula Pearce, Curtin University (Australia)* **Motor Fuel Consumption in the Czech Republic: Households' Demand and Taxation** *Hana Bruhova Foltynova, Jan Bruha & Vitezslav Pisa,* *Kolin Institute of Technology (Czech Republic)*	B318, Level 3
	Renewable energy and innovation Chair: Rowena Cantley-Smith (Australia) **Renewable Electricty Support In The EU – What Lessons Can Be Learned?** *Claudia Kettner, Austrian Institute of Economic Research (WIFO) (Austria)* **Renewable Energy for Climate Change Mitigation -- Law and Policy Development in China** *Yuhong Zhao, The Chinese University of Hong Kong (Hong Kong)* **Picking Winners And Losers: A Qualitative Examination Of Tax Subsidies To The Energy Industry** *Tracey Roberts, Hastings College of the Law, University of California (USA)* **Market based mechanisms for dummies: Lesson 101 how to destroy a market based mechanism** *David Leary, University of Technology Sydney (Australia)*	B327, Level 3
	Market Instruments Chair: Kris Bachus (Belgium) **The ad unit and ad valorem tax burden shifting and its impact on Pigovian taxation in the European Union countries** *Marian Dobranschi & Danuse Nerudova, Mendel University from Brno (Czech Republic)* **Just ETS? An Inquiry into the Theory and Practice of the Fairness of Carbon Markets** *Sven Rudolph, Kyoto University, (Japan)* *Achim Lerch, Hessian University of Cooperative Education (Hessische Berufsakademie) (Germany)*	B329, Level 3

	Tax Offset for Environmental Sustainability *Sally-Ann Joseph, National University of Singapore (Singapore)* **A Study on Economic Feasibility Evaluation Method of Sustainable Building Technologies Using Life Cycle Cost Analysis** *Hae Jin Kang, Won Yi, HwangHwan Kim & Seung Kim, Samoo Architects & Engineers (Korea)*	
18:15-18:30	Walk to wharf	Meet at the front of UTS Building 5, Block B
18:30-19:15	***Sydney Harbour Cruise**, drop off at dinner*	*Darling Harbour*
19:15 – 22:30	***Conference Dinner sponsored by CPA Australia at: Water*** *Keynote Speaker:* ***The Honourable Bob Carr*** *Professor and Director, Australia-China Relations Institute, University of Technology Sydney*	*Pier One Sydney Harbour, Walsh Bay*

Friday 25th September 2015		
9:15-10:45	**Plenary 3** Chair: Associate Professor Karen Bubna-Litic (Australia) **Gary Wells,** Chief Executive Officer, Nature Conservation Trust of NSW *A Practical Guide to Conservation Covenants* **David Lowe,** Chief Winemaker, Lowe Wines *Slow Farming in A Hurry* **John Seidel,** Principal Project Officer, NSW Office of Environment and Heritage *The NSW Biodiversity Banking and Offsets (Biobanking) program* **Samantha Daly,** Partner, McCullough Robertson *The new world of biobanking as a compulsory mechanism for mining related offsets – the good, the bad and the ugly*	Moot Court, Level 1
10.45-11.15	*Tea and coffee break*	*Foyer, Level 1*
11:15-12:45	**Parallel sessions III**	
	Green fiscal reform Chair: Professor Larry Kreiser (USA) **Italian Environmental Taxation 2015: A Real Green Revolution???** *Carlo Soncini, University of Parma (Italy)* **The Global Natural Resource Consumption Tax and Sovereign Immunity** *Sally-Ann Joseph, National University of Singapore (Singapore)* **Incentives for rent-seekers or regeneration?** *Karl Fitzgerald, Prosper Australia (Australia)* **Environmental Protection Obligations of Chinese Agricultural Cooperatives: No One Lags Behind** *Bill Butcher, University of New South Wales (Australia)* *Yan Xu, The Chinese University of Hong Kong (Hong Kong)*	B317, Level 3
	Natural Resources Chair: Professor Tracey Roberts (USA) **By a "Water Footprint" Taxation. Case study** *María Sotelo Pérez, Ignacio Sotelo Perez & Jose Antonio Sotelo Navalpotro Complutense University of Madrid (Spain)* **The ability of environmental taxation in aiding the sustainability of natural resources whilst reducing dependence on depleting conventional income and profit based sources of public revenue: A South African context.** *Willem Malherbe, University of Johannesburg (South Africa)* **The tale of two taxes: The fate of resource tax reform in Australia** *Kevin Morrison & Damien Giurco, Institute of Sustainable Futures, University of Technology Sydney (Australia)*	B318, Level 3
	Renewable energy and innovation Chair: Professor Mona Hymel (USA)	B327, Level 3

	Tilting at Windmills: Moving Towards a Non-Renewable, High-Carbon Intensive Australian Energy Market *Rowena Cantley-Smith, Monash University (Australia)* **Re-examining a Role of Electricity Retailers** *Eiji Sawada, Kyushu Sangyo University (Japan)* **Biomass co-firing with coal to generate electricity and heat in EU 28: potential demand, CO2 and biomass breakeven price and emissions reductions** *Jérémy El Beze, Paris Dauphine University (France)* *Vincent Bertrand, Laboratoire d'Économie Forestière, AgroParisTech, INRA, Franche Comté University(France)*	
	Market Instruments Chair: Associate Professor Hope Ashiabor (Australia) **Scandinavian exceptionalism in the European Union ? Taxing atmospheric pollutants within the acquis of the emissions trading and energy taxation directives** *Mikael Skou Andersen, Aarhus University (Denmark)* **Emissions Trading in China: Return on EU Experience on the Stabilisation of Carbon Prices** *Yan Xu, The Chinese University of Hong Kong (Hong Kong)* *Anatole Boute, The Chinese University of Hong Kong (Belgium)* **The EU Emission Trading Scheme: Allocation Patterns in Phase 3** *Claudia Kettner, Austrian Institute of Economic Research (WIFO) (Austria)* **Taxation of cross-border permit transactions under linked ETSs** *Celeste Black, The University of Sydney (Australia)*	B329, Level 3
12:45-14:00	*Lunch*	*Foyer, Level 1*
14:00-15:30	**Plenary 4** Chair: Professor Janet Milne (USA) **Chas Roy-Chowdhury ,** Head of Taxation, ACCA *Environmental Taxes – Destination Europe* **Peter Cosier,** Director & Founding Member, Wentworth Group of Concerned Scientists *Using markets for a healthy environment in a productive economy* **Dr. Anne Poelina,** Managing Director, Madjulla Incorporated *A Case Study for Environmental Tax Offsets : Collaboration of Indigenous Science and Western Science to Value and Protect Cultural and Geo heritage Landscapes as Culture, Science and Conservation (Green) Economies* **Nils Axel Braathen,** Principal Administrator, Environment Directorate, OECD *Some steps towards setting Pigouvian tax rates*	Moot Court, Level 1
15:30-16:00	*Tea and coffee break*	*Foyer, Level 1*
16.00-17:30	**Parallel sessions IV**	
	Green fiscal reform Chair: Associate Professor Sven Rudolph (Japan)	B317, Level 3

	Lessons from Green Growth Strategy of South Korea – Australia's Trading Partner *Seck Tan, National University of Singapore (Singapore)* **Carbon pricing and climate change policy in Australia: a historic perspective** *Evgeny Guglyuvatyy, Southern Cross University (Australia)* *Natalie P Stoianoff, University of Technology Sydney (Australia)* **CO2 in goods** *Agime Gerbeti , Gestore Servizi Energetici GSE (Italy)* **Barriers And Incentives To Changing Business Attitudes For The Circular Economy** *Suzanne Benn & Robert Perey, University of Technology Sydney (Australia)*	
	Environmental stewardship Chair: Professor Roberta Mann (USA) **Using market instruments to improve product stewardship and waste management outcomes for e-waste in Australia** *Wayne Gumley, Monash University (Australia)* **Current Status and Issues on the forest environmental tax for the preservation of the local resources in Japan** *Tae-Yeoun Lee, Ryukoku University (Japan)* **A bottom up approach to develop REDD+ programs in Brazil´s northern states and California** *Ana Carolina Duque, Campos Mello Advogados, (Brazil)*	B318, Level 3
	Market Instruments Chair: Professor Paul Lee (USA) **A win-win for GHG emitters: Australia's Emissions Reduction Fund, sustainable land use, carbon credits and carbon taxes** *Vanessa Johnston, Monash University (Australia)* **Environmental Taxes on Industries in Indonesia: A Normative Review on Respective Laws and Regulations** *Dahliana Hasan, Gadjah Mada University (Indonesia)* *Hope Ashiabor, Macquarie University, (Australia)* **Regulation of ship-sourced carbon dioxide emissions: The creation of economic instruments** *Stathis Palassis, University of Technology Sydney (Australia)* **Fossil Fuel to Renewable Energy: Comparator Study of Subsidy Reforms and Energy Transitions in African and Indian Ocean Island States** *Kai Schlegelmilch & Jacqueline Cottrell, Green Budget Germany/Green Budget Europe (Germany)* *Francois Fortier, United Nations Office for Sustainable Development (USA)*	B329, Level 3
	Night at Leisure / Catching up with Friends	

Saturday 26th September 2015 – Roundtable		
9:00 -10:30	**Roundtable – Evaluation Criteria for Environmental Tax Measures** Chair: Michael D'Ascenzo (Australia) **Impact of Fiscal Taxation Policy on the Industrial Energy Consumption and Pollution Emission** *Shuting Gao, Chinese Academy for Environmental Planning (China)* *Chazhong Ge, Chinese Academy for Environmental Planning (China)* *Mingbing Xue, State Administration of Taxation (China)* *Li Xiaoqiong, Chinese Academy for Environmental Planning (China)* **Energy Tax Incentives (Oops, I mean "Expenditures"): Did Surrey's Tax Expenditure Concept Really Impact Tax Laws?** *Mona Hymel, University of Arizona (USA)* **Tax and the Environment: An Evaluation Framework for Tax Policy Reform** *Natalie P Stoianoff, University of Technology Sydney(Australia)* *Michael Walpole, University of New South Wales (Australia)* *Suzanne Benn, University of Technology Sydney (Australia)*	Moot Court, Level 1
10:30-11:00	*Tea and coffee break*	*Foyer, Level 1*
11:00-12:30	**Roundtable continues with Group Delphi Study** Convenors: *Natalie P Stoianoff, University of Technology Sydney (Australia)* *Michael Walpole, University of New South Wales (Australia)* *Suzanne Benn, University of Technology Sydney (Australia)*	Moot Court, Level 1
12:30-12:40	Next Year's Conference: GCET17	Moot Court, Level 1
12:40-13:00	Closing Ceremony	Moot Court, Level 1

Keynote Welcome Reception Speaker

Councilor Robyn Kemmis
Deputy Lord Mayor City of Sydney

BIO: Councillor Robyn Kemmis (BA(Hons) (UNE), MA (Essex), HonDUniv (UTS)) is an experienced administrator who was previously the Deputy Vice-Chancellor (Administration) at the University of Technology, Sydney (UTS). Prior to joining UTS, Robyn held a number of senior management positions within the NSW public service. She has studied and worked at the University of New England and the University of Essex as a researcher and tutor, and has worked in publishing and tourism in London.

Robyn has a long-standing interest in equal opportunity and has pursued that interest both personally and in her professional life

Robyn is committed to enhancing the City of Sydney's long-term sustainability - environmentally, physically, socially and financially.

Keynote Dinner Speaker

The Honourable Bob Carr
Professor and Director, Australia-China Relations Institute,
University of Technology Sydney

BIO: Professor the Honourable Bob Carr is Director of the Australia-China Relations Institute at the University of Technology, Sydney, a think tank focused on Australia-China relations. He was Australia's Minister for Foreign Affairs March 2012 to September 2013. He is also the longest continuously serving Premier in New South Wales history, having served for 10 years between 1995 and 2005. Prior to that he served as Minister for Planning and Environment 1984 to 1988 and as Leader of the Opposition from 1988 until his election as Premier in March 1995.

As Premier he received the World Conservation Union International Parks Merit Award for creating 350 new national parks. He introduced the world's first carbon trading scheme and curbed the clearing of native vegetation, both anti-greenhouse measures. He was a member of the International Task Force on Climate Change convened by Tony Blair, and was made a life member of the Wilderness Society in 2003.

Bob Carr has received the Fulbright Distinguished Fellow Award Scholarship. He has served as Honorary Scholar of the Australian American Leadership Dialogue and is the author of Thoughtlines (2002), What Australia Means to Me (2003), My Reading Life (2008) and Diary of a Foreign Minister (2014).

Keynote and Plenary Speakers

Professor Ross Garnaut AO
University of Melbourne

BIO: Professor Ross Garnaut AO is a Professorial Research Fellow in Economics at the University of Melbourne (since 2008). Earlier at the Australian National University he was Distinguished Professor of Economics (2007-2013) and before that longstanding Head of the Division of Economics in the Research School of Pacific and Asian Studies. He has been awarded the degrees *honoris causa* of Doctor of Letters from the Australian National University and Doctor of Science from the University of Sydney. He is an Honorary Professor of the Chinese Academy of Social Sciences and of Renmin University, a Fellow of the Australian Academy of Social Sciences, a Distinguished Fellow of the Australian Economics Society and a Distinguished Life Member of the Australian Agricultural and Resource Economics Society. Professor Garnaut has been Chairman of the Australian Centre for International Economic Research (1994-2000) and Trustee (2003-2006) and Chairman (2006-2010) of the International Food Policy Research Institute. He was the senior economic policy official in Papua New Guinea's Department of Finance in the years straddling Independence in 1975, principal economic adviser to Australian Prime Minister Bob Hawke 1983-1985, and Australian Ambassador to China 1985-1988.

Professor Garnaut is the author of numerous books, monographs and articles in scholarly journals on international economics, public finance and economic development, particularly in relation to East Asia and the Southwest Pacific. Recent books include*The Great Crash of 2008* (with David Llewellyn-Smith, Melbourne University Publishing 2009) and *Dog Days: Australia After the Boom* (BlackInc 2013). He is the author of a number of influential reports to Government, including *Australia and the Northeast Asian Ascendancy* (Australian Government Publishing 1989*), The Garnaut Climate Change Review* (Cambridge University Press 2008) and *The Garnaut Review 2011: Australia and the Global Response to Climate Change* (Cambridge University Press 2011).

Professor Garnaut chaired the boards of major Australian and international companies continuously from 1988 to 2013, including Lihir Gold Ltd (1995-2010); Bank of Western Australia Ltd (1988-1995); Primary Industry Bank of Australia Ltd (1989-1994); Papua New Guinea Sustainable Development Limited Pty Ltd (2002-2012) and its subsidiary Ok Tedi Mining Limited; Lonely Planet Pty Ltd; Aluminium Smelters of Victoria Ltd.

TITLE: The Essential Role of Carbon Pricing

ABSTRACT: All major countries are now committed to substantial reductions in the trajectory of carbon emissions. Many instruments are being applied in pursuit of carbon reductions—some regulatory, some fiscal and some involving the trading of carbon permits. Some carbon pricing initiatives have been politically effective (British Columbia), and one has been abandoned for the time being under political attack after appearing to perform well against stated objectives (Australia). This presentation assesses the relative merits of various approaches to carbon pricing and regulatory intervention, and notes the value of combinations of carbon pricing and regulation. It concludes that while it is not impossible to achieve any desired extent of emissions reductions through regulatory action, the lower costs of approaches that include carbon pricing mean that carbon taxes or emissions trading schemes are important elements of ambitious mitigation programmes.

Chloe Munro
Chair & Chief Executive Officer, Clean Energy Regulator

BIO: Prior to her appointment as the Chair and Chief Executive Officer of the Clean Energy Regulator, Ms Munro was the Chair of the National Water Commission; the Independent Non-executive Chairman of AquaSure, the consortium building Victoria's desalination plant; and a non-executive director of Hydro Tasmania.

From February 2004 until July 2009, Ms Munro was an executive director of Telstra. She held leadership positions in human resources, business operations, information technology, public policy and communications, and customer service.

Ms Munro served in the Victorian public sector from 1996 to 2004, in the positions of Secretary of the Department of Primary Industries, Secretary of the Department of Natural Resources and Environment, and Deputy Secretary of the Department of Treasury and Finance. In the Department of Treasury and Finance, she headed the division implementing Victoria's energy reform and privatisation program. Early in her career she worked in the public, private and not-for-profit sectors in Kenya, New Zealand and the United Kingdom.

Ms Munro holds master's degrees in mathematics and philosophy from Cambridge University and in business administration from the University of Westminster. She is a Fellow of the Australian Academy of Technological Sciences and Engineering and the Institute of Public Administration Australia and was awarded a Centenary Medal for outstanding contribution to public administration in 2001. Most recently, Ms Munro was appointed as a Fellow of the Australian Academy of Technological Sciences and Engineering in recognition of her work in major infrastructure and natural resource markets.

TITLE: Institutional foundations for effective carbon emissions and renewable energy regulation and taxation in Australia

ABSTRACT: Effective environmental taxation and regulation needs strong legislative and institutional underpinnings. The Clean Energy Regulator performs this function for Australia's policies to reduce emissions and increase renewable energy.

In the presentation, I will outline the practical application of regulating carbon emissions and renewable energy. I will explore the benefits of a well established measurement system, robust market instruments (tradeable units and certificates), and an arm's length regulator. I will also discuss how the Regulator determines its regulatory posture and its frameworks for clients, markets and risk.

The Clean Energy Regulator administers the National Greenhouse and Energy reporting scheme. This scheme provides a national framework for reporting and disseminating company information about greenhouse gas emissions, energy production and energy consumption. This scheme is now in its eighth year of data collection. Under this scheme the Clean Energy Regulator has achieved high compliance rates with very few disputes over regulated entities' reports.

Because of this maturity and client acceptance, the Clean Energy Regulator has been able to build carbon market mechanisms efficiently and effectively on the foundations of the National Greenhouse and Energy Reporting scheme, including:

- the Carbon Pricing Mechanism from July 2012 to June 2014, and
- the Emissions Reduction Fund since December 2014

The Emissions Reduction Fund is a $2.55 billion fund to purchase certified carbon abatement. The Clean Energy Regulator performs both the crediting and purchasing components of this scheme.

The Clean Energy Regulator also administers Australia's Renewable Energy Target. The Renewable Energy Target imposes an obligation on electricity retailers to purchase renewable electricity certificates in proportion to the electricity acquisitions. The Clean Energy Regulator accredits renewable energy generators and the electricity they produce. This scheme has been amended frequently since it commenced in 2000 and continues to provide incentives for increased renewable electricity generation in Australia.

Hugo Llorens
Consul General of Consulate General of United States in Sydney

BIO: Hugo Llorens arrived in Sydney October 3, 2013 to become Principal Officer at the U.S. Consulate General with responsibility for the region encompassing New South Wales, Queensland and Norfolk Island. Previously, he served as the Assistant Chief of Mission at the U.S. Embassy in Kabul, Afghanistan from May 2012 to June 2013. In that position, he served as the Chief Operating Officer of the largest Embassy in the world with a combined staff of 3,000 U.S. local and Third Country employees representing 19 U.S. government agencies.

Prior to his assignment in Afghanistan, Llorens was Ambassador-in-Residence at the National War College in Fort McNair, Washington DC. He also served as U.S. Ambassador to Honduras from September 2008 to July 2011. Prior to his nomination and confirmation as Ambassador, he served for two years as the Deputy Chief of Mission (DCM) at the American Embassy in Madrid, where he took up his duties September 1, 2006. Ambassador Llorens was also Deputy Chief of Mission at the American Embassy in Buenos Aires, Argentina, where he served for three years from August 2003 until July 2006.

Mr. Llorens received his Master of Science in National Security Studies, National War College in 1997; Master of Arts in Economics, University of Kent at Canterbury, England in 1980; and Bachelor of Science in Foreign Service from Georgetown University in 1977.

TITLE: The U.S. Perspective on the Clean Energy Revolution

ABSTRACT: The clean energy revolution is a trend that has already begun to dramatically impact each one of us and will likely change the way we live our lives day in and day out. The introduction of renewable energy technology continues to grow and create transformational innovations. While the U.S. is committed to an all-of-the-above energy strategy, President Obama is leading the way to expand renewable energy technologies in the energy mix. The U.S.-China Joint Announcement on Climate Change and Clean Energy Cooperation is a significant step to mark the shift towards renewable energy and shows that the benchmarks are constantly being set higher.

Adam Awty
Chief Operating Officer Commercial, CPA Australia

BIO: Currently Chief Operating Officer, Commercial for CPA Australia, Adam has been with the organisation for 14 years. Adam is responsible for the provision of strategic advice to the Chief Executive and Board on financial, commercial and business strategy. With a responsibility for more than 200 staff across 19 offices internationally, Adam leads the Technology, Strategic Planning, Finance, Property Management, Member Administration, Board Secretariat, Procurement & Business Services, People & Culture, Business Development and Brand portfolio's. Adam is also Chair or member of a number of Government Audit Committees. Prior to CPA Australia, Adam worked with the Victorian Government Departments of Treasury and Finance and Human Services.

TITLE: Transforming the Australian Accounting Profession for the Carbon Challenge

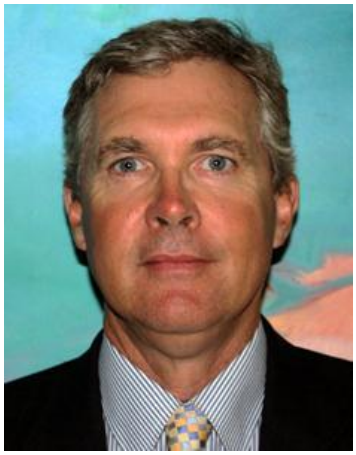
ABSTRACT: Climate change and human activities that induce greenhouse gas emissions continue to be significant global issues; more so as we head towards the next United Nations Climate Change Conference (COP21) this December. The response by organisations that are significant emitters continues to be scrutinised. The accounting profession plays a vital role in the economic and political responses to climate change. It is crucial to understand how organisations, within periods of economic and policy uncertainty, address climate change and greenhouse gas emissions through strategic planning and decision-making. CPA Australia's research (conducted together with the University of Sydney as part of an Australian Research Council Linkage Grant) analyses publically available ASX company disclosures (*National Greenhouse and Energy Reporting Act 2007* (NGERS)) to determine the processes by which organisations are addressing these significant global issues within the current policy environment. This knowledge will enable the accounting profession, and business more broadly, to address the management of carbon within a more informed context, particularly at the level of industry category.

Martijn Wilder AM
Head of Global Environmental Markets, Baker & McKenzie

BIO: Martijn Wilder AM is head of Baker & McKenzie's Global Environmental Markets practice. He has written extensively on the legal liability of Directors and Trustees to address climate change risks. Martijn is a Board Member of the Clean Energy Finance Corporation (CEFC), Chair of the NSW Climate Change Council, on the governing board of the Renewable Energy and Energy Efficiency Partnership (REEEP) and a Director and Governor of WWF and the Climate Council. Martijn is a Professor of Climate Change Law at the Australian National University. He is currently Chairing the Independent Review Committee of the Victorian Climate Change Act. In 2012, Martijn was awarded a Member of the Order of Australia in recognition for "service to environmental law, particularly in the area of climate change through contributions to the development of law, global regulation, public policy and the promotion of public debate, and to the community".

TITLE: The Road to Paris and the Critical Nature of Intended Nationally Determined Contributions (INDCs)

ABSTRACT: The 2015 Paris Conference of the Parties (**COP**) is a critical milestone on the road to achieving a 2 degree Celsius cap on the increase of global temperatures. The ability to achieve this will rely on ambitious commitment of countries expressed in their Intended Nationally Determined Contributions (**INDCs)**. Many of these INDCs in fact present future economic growth plans for economies and the path by which they will transition to a cleaner economy. Going forward the ability for countries to implement such commitments will be critical especially as many governments are developing their INDCs at a significant pace and they are not fit for purpose but really must be seen as an initial starting position. They may well set the level of ambition but the pathway to get there will need to be developed. As such this is simply the start of a process that ultimately will depend upon the effective introduction of mitigation and adaptation measures into domestic legal and policy frameworks. this session will look at the current status of INDCs, their level of their ambition and lessons learnt from their development. It will then look at the critical role that strong legal and governance frameworks will play supporting and facilitating policies and measures required for INDC implementation and how this will in turn facilitate the flow of public and private sector climate finance.



Gary Wells
Chief Executive Officer, Nature Conservation Trust of NSW

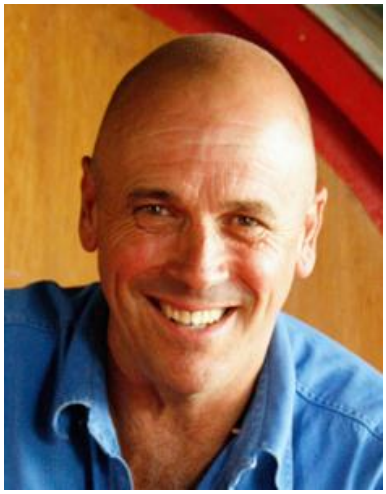
BIO: A graduate of Sydney University in both science and law, Gary started his professional career with Deloitte Touche Tohmatsu and subsequently with Ernst & Young in the mid 80's working in International Trade and Industry Policy consulting with an array of multi-national clients.

In the mid 90's Gary moved his family back to the family farm in Wagga Wagga where he was engaged as a Director at Wagga Wagga City Council managing the economic development portfolio for the city. It was during this time that he became interested in the benefits of biodiversity in farming systems. Regional economic development became a passion for Gary during the 2000s and his consulting business was instrumental in establishing State-wide initiatives including the successful "Evocities" regional marketing campaign.

Gary joined the Nature Conservation Trust of NSW as CEO in 2013 melding his interest in law, business and biodiversity to head this important organisation focussed on protecting private land with high conservation value across NSW.

TITLE: A Practical Guide to Conservation Covenants

ABSTRACT: This presentation will provide a practical overview of the processes used by the Nature Conservation Trust of NSW to provide in-perpetuity protection of high conservation value habitat on private land in NSW through the application of conservation covenants. Topics covered will include : Engaging private landholders in conservation – tax benefits and barriers when looking to apply a conservation covenant; When and where to use a Revolving Fund for effective private land conservation – the issues that need to be considered to maintain a capital fund and achieve biodiversity protection and; Using biodiversity offsets as a mechanism to establish biodiversity connectivity in a rural landscape.



David Lowe
Chief Winemaker, Lowe Wines

BIO: One of Australia's leading wine industry figures, David Lowe represents the sixth generation of the Lowe family, graziers who settled in 1829 at 'Tinja' in the Mudgee region of New South Wales. He graduated with a Bachelor of Science (Oenology) from Roseworthy Agricultural College, South Australia in 1979 but his passion for agriculture and wine was nurtured during his school years and holidays on the family farm where David subsequently established the LOWE vineyard (8 ha) in 1973. Since 2003 it has operated organically.
After graduation David was appointed assistant winemaker at the prestigious Rothbury Estate in the Hunter Valley working for two titans of the wine industry, Len Evans and Murray Tyrrell. David progressed to become chief winemaker and group vineyard manager, significantly expanding Rothbury's production through innovative viticulture that included trellising, canopy management, fruit irrigation and water management. At that time David also undertook vineyard risk management research that led to his identification of Orange as an alternative cool climate grape growing region, which today supplies grapes for selected wines in the LOWE and TINJA portfolios.

David Lowe is a prominent wine industry advocate and formerly held key positions including President, NSW Wine Industry Association; executive member of the Winemakers Federation of Australia; member of the strategic NSW Ministers Wine Advisory Council, and was previously President of the Mudgee Wine Grape Growers Association. David is a regular wine industry commentator and a passionate supporter of smart farming, rural land custodianship and regionalism.

TITLE: Slow Farming in A Hurry

ABSTRACT: The urgency of repairing eroded land, and the need to change the way we operate business is at odds with the natural cycles of agriculture.

Using a farm that has been in the same family since 1823 should ordinarily have set up a stable and successful farm/business enterprise. The need to change the way we practise agriculture is driven by respect for the soil and the degree of intervention required to repair poor previous practises. This discussion centres around how we can organically and practically slowly restore farmland to health approximating how we found it. More difficult however is to increase returns that is needed to compensate for a lower level of productivity.

John Seidel
Principal Project Officer, NSW Office of Environment and Heritage

BIO: John Seidel is a Principal Project Officer with the NSW Office of Environment and Heritage. Since 2008, he has played a lead role in the development and implementation of innovative approaches to biodiversity offsets such as the Biobanking program and biodiversity certification. He has extensive experience working in rural and regional NSW for different government and non-government organisations . John enjoys the challenges of implementing environmental policy through practical programs that improve private land conservation and stewardship. John is based in the NSW regional city of Newcastle where he lives with his wife and three young children.

TITLE: The NSW Biodiversity Banking and Offsets (Biobanking) program

ABSTRACT: The NSW Biodiversity Banking and Offsets (Biobanking) program is a market-based scheme that provides regulatory approvals for unavoidable or residual impacts of development on biodiversity in exchange for biodiversity credits that are created on biobank sites. In operation since mid-2008, the program provides a comprehensive framework for biodiversity offsetting through the use of in-perpetuity conservation agreements, a trust fund that provides ongoing funding for the management of land dedicated as a biobank sites and a scientifically robust and credible method that underpins the assessment of biodiversity values impacted by development.

Established under the Threatened Species Conservation Act, the Biobanking program supports the delivery of a range of NSW policy and regulatory frameworks and it plays a key role in increasing participation in private land conservation. Under biobanking agreements, landowners agree to protect and manage an area of their land to improve its biodiversity values. In return for undertaking agreed management actions to improve biodiversity on these sites, landowners can receive upfront compensation and an ongoing annual payment. These payments are made by the proponent to fulfil their offset requirements and effectively provide a market value for remnant vegetation on rural and farming properties. In this regard, a key feature of the program is the opportunity for rural landowners to generate income by managing land for conservation.

To date, almost 6,000 ha of different native plant communities have been secured across NSW. Over half of this area includes 19 different types of endangered and critically endangered ecological communities listed on the TSC Act.

The plant community types also provide habitat for a range of threatened fauna species, including the Spotted-tailed Quoll (*Dasyurus maculatus*), woodland birds such as the Regent Honeyeater (*Xanthomyza phrygia*) and the Swift Parrot (*Lathamus discolour*), and native bats such as the Yellow-bellied

Sheathtail-bat (*Saccolaimus flaviventris*) and the Little Bentwing-bat (*Miniopterus australis*). Targeted species surveys on biobank sites have identified habitat for threatened flora species, as well as threatened fauna such as Rosenbergs Goanna (*Varanus rosenbergi*) and the Red-crowned toadlet (*Pseudophryne australis*).

This presentation will describe how the offset scheme functions and highlight the benefits of the program and the main conservation outcomes that have been achieved. Using the greater Sydney region as a case study, the presentation will then describe how the offset market values different types of biodiversity and how this compares to rural areas. It will also discuss some of the key challenges that have arisen through implementation of the Biobanking program, including those associated with developing a functioning credit market.

Samantha Daly
Partner, McCullough Robertson

BIO: Samantha has worked in the planning and environment sector for over ten years and has significant experience in the resources and energy industry. Her clients include major miners and large developers, primarily operating in the Hunter Valley. In particular in the resources industry Samantha's clients include Glencore, Peabody, AMCI and the NSW Minerals Council.

She regularly advises on the provisions of the Environmental Planning and Assessment Act, Mining Act, Protection of the Environment Operations Act, Contaminated Land Management Act, Water Management Act, Land Acquisition (Just Terms Compensation) Act and environmental planning instruments. As well as regulatory and approvals advice, Samantha regularly conducts planning and environmental due diligences and acts in litigation matters in the Land and Environment Court, Supreme Court and New South Wales Court of Appeal.

With a broad depth and breadth of experience, working with some of Australia's largest companies on some of the nation's most significant projects, Samantha is able to advise on project development from the very beginning of the application process right through to final delivery and subsequent regulation throughout the life of the project.

TITLE: The new world of biobanking as a compulsory mechanism for mining related offsets – the good, the bad and the ugly

ABSTRACT: Since the commencement of the biodiversity banking provisions in the *Threatened Species Conservation Act 1995* in 2006, biobanking has rarely been used by the mining industry as a method to secure the offsets required for mining projects. In fact prior to 2014, only one major mining company had established a biobanking site to generate the credits required to offset the residual impacts of a mining project.

However times have changed. With the introduction of the *NSW Biodiversity Offsets Policy for Major Projects* on 1 October 2014 and associated *Framework for Biodiversity Assessment* all major projects, including mining projects, are required to secure offset sites through a biobanking agreement, subject to a limited number of exceptions and transitional arrangements. This is a significant shift in policy which requires a move from the practice of using several different conservation mechanisms to secure offsets to one mechanism. As an alternative to the creation of a biobank site, a new NSW Biodiversity Offsets Fund for Major Projects is to be established, will allow for the strategic purchase and consolidation of biodiversity offsets.

For government, the rationale for the mandatory use of biobanking agreements is that '*they will ensure that adequate funding is available for current and future landowners to manage the offset site, and ensure that land is not simply 'locked up and left'*.' They also have clear monitoring and reporting requirements. For the mining industry, the move to the mandatory use of biobanking agreements brings both pleasure and pain. This presentation will give an overview of the new offsetting regime that now applies to major projects and some of the challenges it creates for the mining industry.

Chas Roy-Chowdhury
Head of Taxation, ACCA

BIO: Chas Roy-Chowdhury is Head of Taxation at ACCA. He has a degree in Applied Economics as well as being a fellow of ACCA. He worked in public practice before he joined ACCA Technical Department.

He is Chair of the Taxation Working Group of the small business organisation UEAPME and has been a member of the Indirect and Direct Tax Working Parties at Fédération des Experts Comptables Européens (FEE) - the umbrella group for "first tier" European accountants.

He is a member of the two high level vat expert groups set up by the European Commission as well as the direct tax good governance platform on which he is a highly effective and well respected member. Who puts forward views to balance those purely from a specific point of view from the NGO or business community.

ACCA is the largest and fastest-growing international accountancy body with over 455,000 students and 178,000 members.

TITLE: Environmental Taxes – Destination Europe

ABSTRACT: The global downturn has been devastating especially in the developed world. The European Union is an economic superpower. Yet even though it is such a power block it is the one major location which is taking its responsibilities seriously and actually taking positive action to reduce its carbon emissions.

In my presentation I would like to talk about the progress so far in a time of deep economic down turn, the plans for the future and the EU emissions trading scheme. I would also like to mention the Australian emissions trading scheme and draw upon some of the difficulties being faced by the EU in relation to its scheme, for instance carbon pricing, impact upon airlines due to the extra-territorial nature of the scheme.

Peter Cosier
Director & Founding Member, Wentworth Group of Concerned Scientists

BIO: Peter Cosier is the Director and a Founding Member of the Wentworth Group of Concerned Scientists, a private institution established in 2002 with the aim of connecting science to public policy. In recent years the Wentworth Group has been active in native vegetation and water reform, climate change, promoting policies to optimise carbon in the landscape, and trialing a system of regional scale, national environmental accounts.
Peter has a background in science, specialising in natural resources management and urban and regional planning. He has worked at all levels of Government - Commonwealth, State and Local - and also in private business.
Peter was Deputy Director General in the NSW Department of Infrastructure, Planning and Natural Resources, and spent 6 years as a Policy Advisor to the then Australian Environment Minister, Senator Robert Hill.

TITLE: Using markets for a healthy environment in a productive economy

ABSTRACT: There are thousands of examples across Australia every day, where individual, communities and businesses strive to live sustainably, but too often, despite best intentions, we place short-term interests over long-term benefits.
As a nation, we are taking more from our environment than its natural systems can replenish, and that by any definition is unsustainable. What is needed is a national commitment to long-term reforms that build a productive economy that conserves natural capital rather than degrading it.
Many market activities damage the environment, but this is often not reflected in the market price of goods or services these activities produce. Cumulative impacts of individual decisions are often masked within the production of the goods and services that people consume and as a consequence, people are not fully aware of the long-term impacts of their actions. Often these problems arise because many aspects of the environment have public good values – because no individual or company owns them, these values are not priced by the market, and are often used without regard to costs that may be imposed on others as a consequence.
The Wentworth Group of Concerned Scientists identifies four opportunities for using markets for a healthy environment in a productive economy: (1) applying a duty of care so that future actions result in no net long-term harm to the nations' environmental assets; (2) eliminating fossil fuel subsidies that cause pollution, and introducing of a broad-based land tax to provide a long-term equitable funding base to pay landholders to restore and maintain healthy environmental assets; (3) setting an effective long-term emissions reduction target with a price on carbon to encourage carbon farming to transform the way we farm and manage the Australian landscape; and (4) developing a voluntary, industry-based farm certification, to enhance business confidence and provide farmers with financial benefits for managing their farms sustainably.

Dr. Anne Poelina
Managing Director, Madjulla Incorporated

BIO: Dr Anne Poelina Managing Director of Madjulla Incorporated is a Nyikina Traditional Custodian from the Mardoowarra, Lower Fitzroy River. Her wide experience from working in Indigenous health, education, language and community development for over 30 years has developed a deep understanding of issues impacting on Indigenous Australians living in remote locations. Her childhood growing up in Broome, Derby and out on country have maintained love and respect for land, law and culture particularly in relation to creating industries that are culturally affirming and environmentally sustainable. Dr Poelina has studied the historical colonial context of development in the West Kimberley and how that impacts on contemporary Indigenous participation in decision making, governance, land and water reform. Dr Poelina explores the characteristics of different models of development in relation to the impact and outcomes for Indigenous people in the West Kimberley, particularly in developing culture, science and conservation green economies. Anne was a finalist in the WA Rural Woman of the Year 2010, 2011 Peter Cullen Fellow for Water Leadership and is a signatory to the Redstone Statement that she helped draft at the 1st International Summit on Indigenous Environmental Philosophy in 2010. In 2011 Anne was the **Inaugural Chair** First Peoples Water Engagement Council and later the same year she was elected onto the Broome Shire Council and became Deputy Shire President in her first term of office. In 2014 she was elected as Director to the newly formed Walalakoo Prescribed Body Corporate responsible for the integrated management of 27 000 sqkms of Nyikina and Mangala Native Title lands and waters. In 2014 Dr Poelina was nominated as the Case Study Leader for Kimberley Case Study – Canning Super Basin, Fonds Pacifique Water Governance Project.

TITLE: A Case Study for Environmental Tax Offsets : Collaboration of Indigenous Science and Western Science to Value and Protect Cultural and Geo heritage Landscapes as Culture, Science and Conservation (Green) Economies

ABSTRACT: Indigenous people of the world have unique knowledge systems that can contribute to all fields of scientific endeavors, particularly of generational experiences of being living witness to changing biodiversity and cultural landscapes. The major challenge of generating and maintaining Indigenous knowledge systems and intergenerational practice is not simply an issue of science engagement; it is an issue of international importance for the earth's co-existence with humanity. The solutions presented by Indigenous researchers/scientists, and knowledge holders are founded in a trans-disciplinary approach of collective wisdom, an approach that recognizes and celebrates unity in diversity.

The Kimberley region of Western Australia is one of the last great wilderness of the world. Vast areas of the region were National Heritage Listed in 2011 for multiple world values containing ; vast ramsar wetlands a rich feeding ground for extensive species of migratory birds, the world's largest dinosaur footprints and extensive trackways, ancient rock art, pristine coast lines, rich ecosystems, and unique living Indigenous cultures co-existing with Asian and European heritage. The opportunity needs to be created to invest in partnerships which value and include Indigenous and western scientist/researchers and practioners working together on a series of case studies from diverse cultural and environmental landscapes. Such collaboration would build a body of knowledge around culture, science and conservation green economies for Indigenous peoples by building their capacity to attract and manage environmental tax offsets on their tribal lands and waters.

The vision for our Native title body corporate is to engage in the research, planning, development and delivery of a Maroodwarra (Fitzroy River) Global Geo Park. The Mardoowarra Global GeoPark would build a body of knowledge of cultural, science and conversation values as potential environnemental tax offsets for green economies. It will also have the added value of sharing our commons wealth and future for humanity with planet earth.

Nils Axel Braathen
Principal Administrator, Environment Directorate, OECD

BIO: Nils Axel Braathen is a Principal Administrator in the Environmental Performance and Information Division of OECD's Environment Directorate. He has been with the OECD since 1996, working i.a. on a database on instruments used for environmental policy, on estimating effective carbon prices in selected countries, on cost-benefit analyses, on economic valuation of environmental externalities, on macroeconomic modelling, on the economics of waste and on environmental impacts of transport and agriculture.
Prior to joining OECD he was Deputy Director General in the Department for Long-term Planning and Policy Analysis in the Ministry of Finance, Norway. He holds a Master's Degree in Economics from the University of Oslo, Norway.

TITLE: Some steps towards setting Pigouvian tax rates

ABSTRACT: Textbooks in environmental economics suggest internalising environmental externalities through "Pigouvian" tax rates – using tax rates or other pricing mechanisms that reflect the marginal external costs to society (at optimal pollution levels). In practical policy making, this is easier said than done – among other reasons, due to a lack of knowledge about the magnitude of these marginal social costs. There will probably always be "gaps" to fill in this regard, but some strands of work under the auspices of OECD's Working Party on Integrating Environment and Economic Policies should allow some further steps to be taken in the direction of setting "quasi-Pigouvian" tax rates. This presentation will give information about these strands of work; on the cost of air pollution, on monetary carbon values and on cost-benefit analysis. The work on monetary carbon values gives some information about marginal external costs; the other strand of work contribute in getting a better picture of what the marginal social costs might be. Additional work is needed to translate the information into cost per litre fuel; per kWh of electricity; etc.

Roundtable

Michael D'Ascenzo
Non-Executive Director, Clean Energy Regulator
Former Federal Commissioner of Taxation, ATO

Shuting Gao
Chinese Academy for Environmental Planning (China)

Mona Hymel
Arthur W Andrews Professor of Law
James E Rogers College of Law
University of Arizona (USA)

Natalie P Stoianoff
Professor & Director, Intellectual Property Program, Faculty of Law
University of Technology Sydney(Australia)

Michael Walpole
Professor & Associate Head of School (Research)
University of New South Wales (Australia)

Suzanne Benn
Professor of Sustainable Enterprise, UTS Business School
University of Technology Sydney (Australia)

Abstracts

Scandinavian exceptionalism in the European Union? Taxing atmospheric pollutants within the acquis of the emissions trading and energy taxation directives

Mikael Skou Andersen,
Aarhus University (Denmark)

Jointly the Scandinavian region has a GDP that would make it rank fifth in size in Europe economically, but Scandinavian countries do not constitute a formal governance entity; yet cultural-linguistic similarities of their people and a shared political history explains why they have often acted in comparable ways. Following the ground-breaking 1988 'World Conference on the Changing Atmosphere' in Toronto, for instance, they each pledged to reduce carbon emissions with 20 per cent and subsequently began to extend energy taxes with tax bases relating explicitly to carbon for this purpose.

This paper looks at the approaches adopted in Scandinavian countries for taxation of energy use and the associated pollutants. Some elements of energy and environmental taxation - including taxation of carbon and air pollutants - had been introduced in Scandinavian countries well before transposition of a European acquis in this area. As a result the first regulatory decisions at the EU level regarding exemption mechanisms for energy-intensive industries had to be developed in response to taxation approaches adopted by these countries, notably Denmark as the only Scandinavian EU Member State prior to 1995, but also of Sweden and Finland as they joined the EU.

The EU Energy Taxation Directive of 2003, as well as the EU's Emissions Trading System for carbon allowances that became operational from 2005, provided a stimulus for reform and gradual convergence of energy taxation principles across the European Union as a whole. Still, tax policy making remains a prerogative of the nation state, and this paper explores and explains the distinctly Scandinavian 'model' for energy and environmental taxation as it is working out in the different countries of the region.
This paper benefits from a recent study for the European Commission in which energy and environmental taxes have been mapped throughout EU Member States, revealing a distinctly Scandinavian approach to carbon-energy taxation. Although carbon-energy taxes are in place elsewhere in Member States of the European Union, the architecture of tax bases often has a different and patchier character. Germany, for instance, introduced an ecological tax reform with increases in energy taxes without a specific tax base relating to carbon.

Recasting The Discourse on Pricing Carbon: Australia

Hope Ashiabor,
Macquarie University, (Australia)

Following the repeal of the carbon pricing regime in 2014, the Australian Government replaced it with a regime that provides financial incentives for polluters to reduce their emissions – described as "Direct Action". Funding allocated to its centre-piece- "the Emissions Reduction Fund" – which operates through a reverse auction is capped at $AU 2.55 billion over 4 years. This expenditure is being earmarked for pollution abatement projects at a time of steep declines in fiscal revenues and a blowout in Government spending.

The drift away from carbon pricing it must be acknowledged is not unique to Australia. In the Australian context however, several clear signals have been conveyed by the Government in making it clear that its position on carbon pricing is not negotiable.

This paper canvasses an alternative discourse in an attempt to re-set the basis for re-considering carbon pricing as a central plank in sustainability strategy. Taking on a macro-approach, it selects a sector of the economy as the focus of the discourse. The paper also draws upon insights and developments from the experiences of other jurisdictions, to highlight the costs and benefits of either maintaining the status quo or pursuing the alternatives.

Barriers and Incentives to Changing Business Attitudes for the Circular Economy

Suzanne Benn,
University of Technology Sydney (Australia)
& Robert Perey, University of Technology Sydney (Australia)

The ongoing development of sustainability discourse is responding to pressures from the agency of the circular economy. The principles of ecological sustainability that underpin the associated discourses of the circular economy and industrial ecology advocate approaching waste as a resource, a shift that views waste as intrinsically valuable, rather than a burden that imposes a cost on organisations. We present selected cases of business organisations that have each commenced to change their business models to dramatically mitigate waste. We explore how some of these organisations have redesigned their practices to eliminate the concept of waste from their business models. Relationships between the various organisations and their networks highlight the emergence of the interconnected patchwork that is the start of a circular economy in Australia. Although progression towards technical, social and complexity approaches to systems thinking is evident, with the organisations differing in their take up of circular or closed loop logic, we find that government support in the form of appropriate incentive-based regulation is necessary for wider take up of circular economy principles.

Taxation of Cross-Border Permit Transactions Under Linked ETSs

Celeste Black,
Sydney Law School (Australia)

Multi-jurisdictional emissions trading schemes have the potential to foster more efficient emission reductions due to increased abatement opportunities across the participant regions. Emissions trading systems rely on a price signal, the permit price, which firms use to determine whether to engage in abatement activities or rely on emissions permits to meet their scheme liabilities. Taxation has the potential to undermine a uniform price signal if the taxation consequences across firms covered by the scheme are not consistent. This paper analyses three architectures for linking emissions trading schemes and then systematically examines the direct (income) tax consequences of cross-border permit transactions in order to determine if differential tax treatment is likely to arise in practice. Such consequences necessarily require a consideration of domestic international tax law in conjunction with tax treaties. For the purposes of this paper, examples of two domestic tax regimes are considered, based on the laws of the United Kingdom and Australia, and the OECD Model Convention on Income and on Capital is taken as the starting point for the discussion of tax treaty practice.

Carbon Tax and Carbon Sequestration Payments: Suggestions for a Well Designed Green Fiscal Reform Against Global Warming

Cristina Brandimarte,
ISTAT Italian National Institute of Statistics (Italy)

Global degree of carbon dioxide (CO2) concentration in the atmosphere – a direct cause of global warming- has reached new worrying records, continuing to rise along a steep upward trend, despite the significant progressive moderation in the fuel combustion emission intensity.

Scientific studies point out that in order to stabilize CO2 concentration, current global emissions should be reduced by at least 80%.

Global Carbon Budget estimates indicate that, at present, little more than 50 per cent of emissions from fuel combustion and cement production, the main sources of emissions from human activity, are captured by natural sinks and that over 16 percent of total increase in carbon concentration is due to land use changes, mainly deforestation.

These evidences mean that stabilizing or, even more, reducing CO2 concentration within a reasonably short time horizon would require a too drastic, unrealistic, emissions abatement and suggest that an appropriate strategy could be, along with strengthening efforts to reduce emissions, to adopt policies aiming to effectively enhance carbon sequestration by land ecosystems.

This paper firstly reviews potentialities and risks associated with two classes of marked based instruments to deal with this issue: a)carbon dioxide emission reduction interventions; b)carbon dioxide removal strategies through changes in land use management, in particular reforestation.

Finally, this study offers suggestions on how to design an appropriate fiscal reform combining these instruments in order to effectively contribute to reverse the trend in greenhouse atmospheric concentration offsetting economic and social costs and avoiding negative effects on fiscal sustainability

Motor Fuel Consumption in the Czech Republic: Households' Demand and Taxation

Hana Bruhova Foltynova,
Kolin Institute of Technology (Czech Republic)
& Jan Bruha, Kolin Institute of Technology (Czech Republic)
& Vitezslav Pisa, Kolin Institute of Technology (Czech Republic)

Motor fuel consumption is one of the significant contributors to air pollution and greenhouse gas emissions. Moreover motor fuels are dominantly based on oil, which is a non-renewable resource and motor fuel consumption contributes to its exhaustion.

This paper has three goals: it analyses the evolution of households' motor fuel consumption in the Czech Republic: its dynamics and its cross-sectional patterns; second, it describes the taxation of motor fuels in the Czech Republic; and finally, the paper assesses how motor-fuel taxes influenced the household demand. The assessment is based on estimated demand elasticities: we show that demand patterns and elasticities differ across household groups and that the motor fuel taxes have had different impacts on the household group

Protecting South Australia's Marine Biodiversity

Karen Bubna-Litic,
University of South Australia (Australia)

Internationally, marine parks are recognised as a key tool in protecting and conserving habitats and marine biological diversity. Much like land-based national parks, marine parks play a central role in maintaining ecological processes, protecting areas of natural and cultural heritage, and assisting in adapting to the impacts of climate change. Historically, marine areas in South Australia were protected by the establishment of Aquatic Reserves under fisheries legislation. In 1991, the Commonwealth government tried to promote a biogeographic and ecosystem approach through a national representative system of Marine Protected Areas (MPA's), but despite this push, none of the MPA's in South Australia were specifically designated to protect biodiversity.

The need for marine parks in South Australia to protect marine ecosystems and biodiversity was recognised by the government which released the Marine Parks Bill in 2006. This Act raised a number of conflicting values amongst the community including issues of conservation, commercial and recreational fishing, tourism, and employment. In its introduction into Parliament, the Bill was described as a significant milestone in delivering the government's policy commitments, which included 'zoning marine parks for multiple use, encouraging community involvement and developing effective mechanisms to address displaced commercial fishing and aquaculture effort.' The main objective stressed the role of marine parks to be for biodiversity conservation, not fisheries management, which is addressed under the Fisheries Management Act 2007. Under the Marine Parks Act 2007 (SA), the process of the design and management of marine parks involved a comprehensive public consultation process, over a five year period. At the end of this process, 19 Marine Parks were designated in South Australia and the restrictions on commercial fishing and other uses came into force from October 2014.

Various gaps have been identified in the past identification and management of MPA's which illustrate the conflicting values with this process. These include over-fishing, disturbed breeding grounds, the need to protect older fish with a high reproduction rate, the impact MPA's have on the fishing industry with smaller areas of water to exploit, resulting in a smaller catch, the loss of value of fishing licences, issues of tourism, and impact on the fishing industry and employment. This paper will critically evaluate the mechanisms used in this process to try to alleviate and manage the conflicts arising from the establishment of these marine parks

Environmental Protection Obligations of Chinese Agricultural Cooperatives: No One Lags Behind

Bill Butcher
University of New South Wales (Australia)
& Yan Xu, Faculty of Law, Chinese University of Hong Kong (HK)

China's remarkable economic growth over the past 35 years has come at a cost, not least being a significant deterioration in its natural environment. Chinese authorities have responded to this challenge with a range of measures including the imposition of specifically targeted environmental imposts on business enterprises. In addition, the Chinese central government recently introduced a broader draft environmental tax law directed at air, water, noise and solid waste pollution. This paper examines the extent to which Chinese cooperative enterprises - and agricultural cooperatives in particular – can effectively be subjected to these charges.

Cooperatives have played, and continue to play, an important role in China's economic and social development. They bring benefits in the form of economic stimulation, social cohesion and increased productivity. The Chinese central government, recognizing the importance of these benefits, has provided incentives to the development of cooperatives, specifically exemptions from VAT and stamp duty. Local governments in their turn have provided incentives, notably exemptions from a range of taxes including land use tax, business tax and tax registration fees.

No specific exemptions, however, have been granted from any environmental protection measures including environmental levies, fees and regulations. This may reflect an official view that the social and economic importance of those imposts is at a higher level than the encouragement of cooperatives or it may simply have been considered that sufficient incentive was already provided without the need to encroach upon environmental protection efforts.

The paper examines the difficulties that remain around the legal status of agricultural cooperatives and the consequences for their capacity to operate businesses and for their liability to taxation and other levies. Of special concern is the liability of cooperatives to pay environmental imposts and their potential use by polluting industries as a vehicle to avoid payment of those imposts. Given the special status of agricultural cooperatives, as evidenced by the range of central and provincial government incentives, should they be afforded favourable treatment under the environmental protection regime or is all-encompassing support for their development outweighed by the imperative of environmental protection?

Tilting at Windmills: Moving Towards a Non-Renewable, High-Carbon Intensive Australian Energy Market

Rowena Cantley-Smith,
Monash University (Australia)

Since its inception, Australia's renewable energy target has supported the successful establishment of a thriving market for renewable energy supply and use. The very success of this market mechanism, most notably achieving price parity with other energy carriers in the supply fuel mix - fossil fuels such as coal – appears to be driving the incumbent conservative Federal Government's policy shift and decision to significantly reduce the size of the target. When considered in the broader context of the current Federal Government's naked refusal to acknowledge accepted scientific consensus on climate change, and the anthropogenic drivers underpinning changes to the global climate system, it is difficult to see these governmental actions as anything less than deliberate attempts to marginalise the influence of renewable energy in the national energy market. Moreover, these circumstances provide greater clarity on just how out of step Australia is with the rest of the international community. For example, as the EU, USA, China and many other States move towards increasing renewables in their fuel mix, and committing to ever higher GHG emission mitigation targets, Australia is being led in the opposite direction by its federal political leaders. Nevertheless, there are moves at State levels, such as Victoria, to introduce state based renewable energy targets and other supportive measures. This paper examines the recent changes in the national renewable energy sector and compares the Federal approach to reducing renewable energy's contribution to the national fuel mix, with Victoria's resolve to support renewable energy supply and use through state based measures. An overview of the RET and its success to date commence this discussion. Changes to national renewable policy effected by the current Abbott Federal Government are then examined in light of the RET's accomplishments. The impacts – economic, environmental and social – of these changes form part of this analysis. Victoria's nascent renewable energy target is then examined. This paper concludes by examining the extent to which Australia can satisfy current and future GHG emission reductions under the current Federal Government's trajectory towards a non-renewable, high CO2-intensive Australian Energy Market (AEM) and the likely international consequences of failure to do so.

Carbon Trading or Carbon Tax: Which Is the More Feasible Solution to Climate Change from the perspective of China?

Mingde Cao,
China University of Political Science and Law (China)
& Mingming Liu, Shandong University of Science and Technology (China)

Carbon trading and carbon tax both have some advantages and defects in comparison with each other. Policymakers can choose combinations from a large portfolio of options. Whether carbon tax or carbon trading regime would be more feasible to cope with climate change should be in accordance with the reality in China. The author prefers carbon tax than carbon trading based on the consideration from following aspects. The exigency of global warming needs rapid response of human society. Though, China is experimenting carbon trading pilot program in 7 places, the formation of mandatory unified national carbon market will be from 2021 to 2030. The pace of carbon market building seems sluggish, due to the nature of the complicated market. In contrast, carbon tax would be less time consuming and more efficient. BC's carbon tax has shown the certainty of environmental benefits with a small negative impact on gross domestic product (GDP) in the province at the mean time. The core of carbon tax is the setting of tax rate and the limited taxpayers, the design of carbon tax is simple, therefore carbon tax is easy to be managed. Moreover, the room for corruption from carbon tax regime is much smaller than that of carbon trading, because carbon tax cannot lead to scarcity monopoly

Restriction of WTO rules to Renewable Energy Subsidies

Selina Cheng,
Univesity of New South Wales (Australia)

Recently the understanding of the impact and damage of fossil fuels on climate change has created a strong impetus for action. Many governments have addressed this via supporting renewable energy initiatives. The research and development of such technology is significant, leading to government subsidies amongst other measures. However, some such subsidies are at risk of challenge under various WTO rules due to the subsidy being conditioned or preferential to domestic products.

This paper first recalls the concept of clean energy and the subsidy measures to encourage/support the clean energy industry in some jurisdictions. This is followed by an analysis of the WTO rules and WTO cases that may impact on subsidies. The key WTO rules are Article III:4 of the General Agreement on Tariffs and Trade 1994 (GATT1994) that requires internal regulations not discriminate in favour of domestically-produced products, Article 2.1 of the Agreement on Trade-Related Investment Measures (TRIMs Agreement) that prohibits trade-related investment measures violating GATT Article III, Articles 3.1(b) and 3.2 of the Agreement on Subsidies and Countervailing Measures (SCM Agreement) which prohibit subsidies contingent solely or partly upon the use of domestic over imported goods, and Article XX of the GATT1994 which lays out the environmental exceptions. The WTO disputes concerning clean energy subsidies include Canada–Renewable Energy/Feed-In Tariff, China-Measures Concerning Wind Power Equipment and India — Certain Measures Relating to Solar Cells and Solar Modules concerning cleaning energy subsidies. These and other WTO disputes in this area have been primarily concerned with the legality of requirements in government programs that renewable energy producers use domestic inputs in order to qualify for government support. From the above analysis, this paper argues for the introduction of additional environmental exceptions in the WTO law to ensure the legality under international trade rules of appropriately designed subsidies for renewable energy development.

The Efficiency of Green Economic Instruments in Mexico, Brazil, Colombia, Venezuela and Panama Facing Globalization: A Shared Experience

Heidi Orfilda de la Paz Miranda,
Universidad Autonoma del Estado de Morelos / Consejo Nacional de Ciencia y Technologia (Mexico)
& Edgar Athzel Carmona Arias, Universidad Autonoma del Estado de Morelos / Consejo Nacional de Ciencia y Technologia (Mexico)
& Barbara Edith Orihuela, Universidad Autonoma del Estado de Morelos / Consejo Nacional de Ciencia y Technologia (Mexico)

The system of environmental tax collection in Mexico, Brazil, Colombia, Panama and Venezuela has legal Characteristics in the revenue uptake mechanism That Makes It converge on the same problem in a similar legal context due to the fundraising and manufacturing of economic instruments that have gestated by written legal rules.

On the basics of the foregoing, we observe that the design of laws guaranteeing the development of governmental administration and legal activity which attempt to limit the polluting behavior generate loopholes in the law, constitutional obstacles, inoperative norms of supplementary applications, deficient procedures to access the justice, contradictions to the rule and Its epistemic function, absence or inefficiency of environmental collective actions. These, do not only null legal environmental protection but also null the safeguard of vital human rights.

Consequently, the legal way Contributes to the spread of negative externalities That Increase in space and time the general policy Known as "globalization" which impacts particularly in the countries previously listed due to the exchange of goods and services being promoted with the flag of economic flexibility embellish with international asymmetrical treaties and an excessive exploitation clamming of biodiversity. Without an adequate regulation that counterbalances the economic power of the market under the excuse of meeting the needs of men, but actually it causes worse economic, environmental and social lack of balance. Which drags in its wake the natural constitution of the ecosystem leaving footprints that threaten the survival of the human species and to the detriment of the world's ecological heritage

In view of all that has-been set out above, to legally solve with efficiency this matter, the pro-homine principle, the objective liability of the state, diffused collective rights became a way of leading to order all the legal environmental baggage. Therefore, there ought to be a reduction of legal contradictions, which should be driven as a transformation of the legal systems filling law gaps for the building of qualitative legal standards in function of an outcome, which seeks a balance of economic forces

The ad unit and ad valorem Tax Burden Shifting and its Impact on Pigovian Taxation in the European Union Countries

Marian Dobranschi,
Mendel University from Brno (Czech Republic)
& Danuse Nerudova, Mendel University from Brno (Czech Republic)

This paper researches the impact of indirect taxation on the retail price of unleaded gasoline and diesel in the European Union countries. The main concern is the tax burden shifting as a consequence of imposing the ad valorem and ad unit taxation on the environmental harmful commodities such as gasoline and diesel in the European Union. Assuming that the excise duties on transport fuels are appropriate proxies for environmental taxation, we analyze their individual impact and the combined impact with VAT on the pre- and post-tax retail price of transport fuels. The aim of the paper is to analyze the size of tax burden shifting in case of indirect taxation on transport fuels and its impact on Pigovian taxation in the European Union countries. Our contribution consists of identifying whether the overshifting occurs and establishing a connection with the Pigovian principle that underlies corrective taxation. The results of the research confirm that the tax burden arising from the interaction between VAT and excise duty applied to gasoline and diesel in the EU is overshifted and thus undermines the rationale of corrective taxation.

A Bottom Up Approach to Develop REDD+ Programs in Brazil´s Northern States and California

Ana Carolina C Duque,
Campos Mello Advogados, (Brazil)

This paper aims to analyze the opportunity to develop Reducing Emissions from Deforestation and Forest Degradation (REDD+) programs in the northern states of Brazil through negotiations with the State of California after their recently enacted Cap-and-Trade Program. The proposed discussion is of great importance due to the deadlocked negotiations in the international arena over the reduction of greenhouse gas emissions. In view of this, a bottom up approach, where states from different countries join forces to promote reduction of deforestation, could be a golden opportunity to motivate other countries to reduce carbon emissions. To enlighten readers on the current scenario, an overview of recent events and the existing mechanisms to reduce carbon emissions is included. The paper then discusses the mechanisms adopted by each country in pursuit of reducing carbon emissions. Due to the focus on the REDD+ program, the paper will mainly look at the policies adopted in each country on this regard. In turn, the Californian Cap-and-Trade Program (enacted in 2013) will be described with a specific focus on the sections pertaining this program. As per Brazil, the current legislation and adopted mitigation solutions will be discussed in order to set the scene for the importance of the REDD+ in the country. The paper then analyzes the opportunity for an agreement between each state through current legislation and the negotiations that have been conducted thus far. Through the enactment of a REDD+ program between the American and Brazilian state governments, a mutual gain could be achieved as Brazil would advance along its path of reducing deforestation, while California could strive to supply more carbon credits. Therefore, the paper finally evaluates whether the existing legislation in Brazil is sufficient to promote the program and offers recommendations to guarantee a more transparent and solid framework for negotiations between the countries

Biomass Co-Firing with Coal to Generate Electricity and heat in EU 28: Potential Demand, CO2 and Biomass Breakeven Price and Emissions Reductions.

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Biomass is increasingly acknowledged to be one of the main renewable energy sources for achieving EU 2020 targets. Currently, available options for producing electricity and heat from biomass are small and medium size biomass-based power or heat only plants, biomass combined heat and power (CHP) plants and cofiring biomass with fossil fuels in large thermal plants. Among these options, cofiring is by far the least expensive. Moreover this technology can be implemented immediately in nearly all coal fired power plants in a relatively short period of time and without the need for huge investments.
This paper investigates the EU28 potential for cofiring biomass with coal to generate electricity and heat. Country by country, this potential is estimated for several biomass types (from agricultural residues to torrefied wood pellets), various incorporation rates and different coal-based thermal plants (power-only plants, heat-only plants and CHP plant).
The decision to cofire will not typically be driven by environmental concerns but by economic interest, consequently, carbon (and biomass) switching prices are computed. Results show that the higher the plant efficiency is, the lower the carbon prices and the biomass prices should be to make co-firing profitable. Hence, carbon switching price for cofiring is lower for heat-only boiler and CHP than for power-only plant. Even for electricity generation, biomass co-firing remains profitable with high biomass prices, when the carbon price is high: a Euros 16–24 (25–35, respectively) biomass price (per MWh prim) for a Euros 20 (50, respectively) carbon price. CO2 abatements resulting from co-firing can produce high volumes of CO2 abatements, which may be two times larger than that of the coal-to-gas fuels switching.

Finally, we match potential biomass demand for cofiring to European biomass supply. When comparing situations in various EU countries, we observe great differences in the balance between potential demand and supply. While some countries have a heavily positive balance (e.g., France, Spain), meaning that they can produce more than the potential demand from inland power and heat generation, others countries have a significantly negative balance (e.g., Germany, UK). The potential trade opportunities among EU countries will depend on transportation costs and biomass pre-treatment development.

Investigating Carbon Price Effects on Trade-Offs Between Heating Space Production System and Building Thermal Insulation: a French Case Study Over the 2015 – 2030 Period

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In 2011, energy consumption from heating space production accounted for more than 20% of France's overall energy-related CO2 emissions. Thus, the heating-space production and consumption system (HPCS), including boilers and building stock, will have to be decarbonized by switching to less- emitting boiler technology and/or by investing in building thermal insulation to allow the country to achieve an ambitious greenhouse gases reduction target. Following the recent implementation of a carbon tax by the French government, this paper offers to analyse the potential impact of different levels of carbon price on HPCS and to study carbon price effects on trade-offs between new heating production system technologies and building thermal insulations for French residential heating.

This work is based on the development of the "Zephyr-Heat" model. Zephyr-Heat is a bottom-up energy-economy simulation model which optimizes emission reduction investments for a given price system. The model simulates the energy consumption and CO2 emissions of a differentiated building stock by the investment optimization of heating-space production technologies (*i.e.* switching to different types of energy or to more efficient boilers) and building thermal insulations. The building stock is divided into 24 classes varying in architecture and building period. Emission reductions can be achieved by replacing current boilers with a more interesting individual or collective heating space system (gas, wood, electricity…) or by improving thermal housing insulation through wall, floor, roof or window alterations.

The model is run on the French housing stock for different carbon price levels and trajectories between 2015 and 2030. A comparative analysis is led on boilers technology development and type of insulation measures implemented. The results show that different levels of carbon price can alter existing trade-offs between switching to a cleaner boiler and housing thermal envelope enhancement. Moreover, different carbon tax pathes leading to a similar CO2 price in 2030 can bring out various heating space production energy mixes and induce thermal insulation technology development, underlining inertia and technology lock-in effects.

Incentives for Rent-Seekers or Regeneration?

Karl Fitzgerald,
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The global commons has for too long been left as a free-for-all for rent seekers. An effective way to protect natural resources is to tax their economic rents.
The Australian government struggles to meet its budgetary agenda with the risk of large deficits. It also fails in its basic caretaker duties with environmental damage continuing to imperil the opportunities of future generations. Meanwhile the wealth gap continues to expand.

Sprawl plays a significant role in enforcing long term climate emissions. The cost of housing in outlier communities compounds these costs with minimal savings delivered. Lot sizes have been reduced to maintain similar per metre costings for those closer to town. Insufficient analysis occurs on the cost of the never ending housing bubble and how this curtails consumer abilities to behave more sustainably. Land prices increased some $418bn in the 2013-14 financial year but little is collected by government, despite continuous Federal and State Treasury reports advocating for the greater usage of economic rents. Furthering concerns, large numbers of vacant houses restrict urban density objectives. Water consumption could be utilised as a proxy for vacancy, as the Speculative Vacancies report has quantified for seven years.

The tapering of the mining boom has seen now hollowed out regional economies drowning in mortgage debt as local resilience has been priced out. Shareholders continue to receive their share of the rents but the public are left with little. Even the much heralded Petroleum Resource Rents tax claims a 40% rate but delivers an effective 3.2% return. Exorbitant depreciations are used to carve away those incomes not sent to tax-minimisation hubs such as Singapore. Mining interests will be expecting less concern over their extractavist activities if remote indigenous communities are closed.

Positive steps have been made in some areas, including the ABS's world leading Australian System of Environmental Accounting. This quantifies the value of eco system services in both monetary and non-monetary measures.

Australian priorities will be compared by investigating the incentives for rent-seeking and the meagre financing for environmental regeneration and science.
Lastly, the Total Resource Rents of Australia report will be referenced to demonstrates the significance of economic rents and how they could be utilised to meet the right wing objective of lowering taxes and leftist aims of providing self financing infrastructure, urban density and affordable housing. Efficiency, equality of opportunity and sustainability can be delivered

Impact of Fiscal Taxation Policy on the Industrial Energy Consumption and Pollution Emission

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& Mingbing Xue, State Administration of Taxation (China)
Li Xiaoqiong, Chinese Academy for Environmental Planning (China)

In recent years, China's energy consumption intensity continued to decline and the renewable energy developed rapidly in which fiscal taxation policy played an important role. The adjustment of energy consumption structure and the decline of consumption intensity are the key factors for pollution control. The paper studied the fiscal taxation policy, price, the corresponding relationship between energy production & consumption and analyzed the mediating role of fiscal taxation policy on energy consumption based on FTPL theory and by utilizing the methodology of coefficients for energy consumption elasticity and pollution emission. It aims to build a fiscal taxation policy system for promoting the sustainable development of energy and the environmental protection.

The paper involves four aspects: (1) It analyzed and streamlined the current energy taxation policies, including taxes, fee collection, subsidies, fund and price etc.; (2) It investigated and studied the mechanism of energy price formation in China, analyzed the impact of fiscal taxation policies on different energy prices; (3) It conducted empirical studies utilizing the energy end-use data and pollutants emission data from different industries, analyzed the impact of energy price and fiscal taxation policies on the industrial energy consumption and pollution emission; (4) Main conclusions and suggestions for the reform of fiscal taxation policies.

CO2 in Goods

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Emission Trading Scheme has not achieved its goals. It was not attractive to other geographic areas and the global emissions have increased business as usual. Europe, net of the crisis, did not consume less but produced less importing goods from emerging countries with high carbon intensity; EU is, in fact, delocalizing production and its consumption. In addition, the tradable allowances reached a not at "worthy" price level to encourage research and investment. So, ETS has become some kind of (low) negotiable energy tax burden on EU business competitiveness in the global market.
The WTO (and international policies opportunities) does not allow the imposition of a carbon border tax.

This proposal is to consider, for putting into the European market, the CO2 as a raw material used in the production of goods, regardless of where they are produced. Enhance it in quantity "contained" in a single product as a result of the energy mix used. The cost of CO2 would be administered as a charge converging in VAT.
This approach allows an enhancement of CO2, which is free from the fluctuations of the market and from local production crisis, that can be set at a "worthy" level for enabling research and encourage low-carbon investments both in EU and non-EU territories. It would also create - because of the greater efficiency of the European energy mix - competitiveness in energy costs of production.
This approach - adopted also unilaterally by Europe - does not violate the rules of the WTO, as long as it allows industries outside the EU to demonstrate their energy production mix. If European standards are respected, industries would be exempted from the charge on emissions within the VAT.

In an extremely complicated context of energy and industry - US going towards energy independence thanks to shale gas; China and India are increasing their market shares; OPEC Countries are adopting "strong" international policies on cost of crude oil - Europe needs to use the advantage of the low carbon intensity of its industrial system; especially now that with the abandonment of free allocation, the system production cost will inevitably grow.
This could be a way to create conditions to lower global emissions and increase environmental benefits faster than any global agreement, (this will came surely late). The aim is not to lower our environmental objectives but to urge the rest of the world to follow Europe.

The Coordination of Energy Taxes and ETS

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The paper aims at analyzing at first the legal nature of the EU Trading Scheme and, in particular, the hypothesis which considers as taxes the obligations to acquire allowances for a valuable consideration.

It is worthwhile to specify that one thing is the intangible "allowance", another is the obligation to buy a certain amount of allowances corresponding to the polluting emissions.
The ETS seems to be a hybrid and multipurpose instrument, with a fiscal function which is neither exclusive, nor prevalent. There is, in fact, a combination of priority environmental aims (through the maximum cap and the burden for the operators who intend to get "rights to pollute"); and energetic efficiency promotion aims (the operators who produce lower emissions have a lower burden or can sell the exceeding certificates, by transferring the economic burden on the less virtuous operators).

Against this background, the ETS should be coordinated with Co2 taxation in order to avoid overlaps between the EU emission trading scheme, on the one hand, and taxation serving the same purpose, on the other.

Indeed, although the ETS allocation system has changed in the course of time, moving from the original criteria of free allocation to the auctioning allocation, derogations to the general rule of auction are still provided. In respect of environmental principles, it is clear that only the allowances allocated through auction are in line with environmental principles.
The cap represents the acceptable risk: the amount of emissions included in the cap follows the polluter-pays principle as economic compensation for the emitted CO2 tonnes.
Beyond such limit, further allowances cannot be emitted and, as a consequence, no further emission is tolerable, according to the prevention principle. The cap itself is the measure identified ex ante to reduce the risk of environmental damage.

In this assumption, the allowances allocated for free prima facie seem to run against environmental principles and aims.

Their ratio is inspired by principles out of the environmental ones and, first of all, by the aim to prevent a loss of competitiveness in certain production sectors and a possible diminution of economic development and employment.

Therefore the measures to coordinate ETS with energy taxation – such as exemptions or tax credits – must be testes in order to identify the most environment - oriented solution

Carbon Pricing and Climate Change Policy in Australia: a Historic Perspective

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Australia had actively participated in the Earth Summit in Rio in 1992. It endorsed the Summit achievements, which were formed by the desire for sustainable development. Australia also joined the United Nations Framework Convention on Climate Change and later signed the Kyoto Protocol enthusiastically supporting greenhouse gas reduction. A range of measures aimed to reduce Australia's greenhouse gas emissions have been on agenda at the Federal and State level for last decades. Successive Australian governments have been committed to the introduction of carbon tax or emissions trading scheme designed to mitigate climate change. This article examines the historical progress of Australian climate change policy. The present Australian Government Direct Action Plan proposal is also discussed to assess the implementation process of the proposed regime. The article in particular examines several interesting and significant aspects of the Australian climate law highlighting governmental approaches and processes leading to introduction of eventual law. The historical perspective is necessary to identify most common features of the climate law implementation procedures and to identify what political factors influence these processes in Australia. Examination of Australian climate change regime indicates how different actors influence policy proposals to achieve their own goals, rather than to cooperate in a process of generating the best overall law option. This paper concludes that the development of climate law in Australia involved some innovative and responsive law initiatives. However, the practical implementation of various climate change laws had been constantly disturbed by various economic and political factors.

Using Market Instruments to Improve Product Stewardship and Waste Management Outcomes for e-waste in Australia

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Over the last few decades globalisation and increasingly complex high tech consumer products have shifted the focus of environmental regulation away from pollution control to waste management and resource conservation. The rapid growth in consumption and disposal of high tech consumer products poses both a pollution problem and a resource security problem. For instance, a recent UNEP report noted that only around one-third of the 60 metals it studied had a recycling rate of 25% or more. At the same time, governments have shifted regulatory style away from prescriptive measures to more self-regulatory and market-based approaches. A notable example is the Product Stewardship Act 2011 (Cth), which has established the National Television and Computer Recycling Scheme, which requires key industry participants to meet certain collection and recycling targets for end-of-life televisions, computers, and ancillary products.
This paper will review the early progress of operation of the National Television and Computer Recycling Scheme drawing upon research conducted as part of the CSIRO Flagship Cluster Wealth from Waste project. A review of regulatory literature and observations from a series of recent interviews with industry stakeholders will be used to provide insights into the role of taxes, charges and subsidies to promote better recovery and recycling outcomes for e-waste in Australia

The Renewable Energy Target in Australia: The Rationales, Schemes, Effects and Costs

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Renewable energy plays a vital role in mitigating climate change, advancing energy security and reducing impact of fossil fuel uncertainty. For Australia, the Renewable Energy Target (RET) is developed to deliver on the Australian Government's commitment to ensure that the 20 per cent of Australia's electricity supply will come from renewable sources by 2020. The main objectives of RET are to achieve decarbonisation coupled with position the economy to remain competitive advantage in the global energy market result in the development of the RET. At present, there has been a criticism in relation to the big developments in RET and the request by the Clean Energy Council, along with other industry bodies, for a compromise. This paper draws on the issue of policy rationales for RET, the RET basic schemes, the effects of RET to the power industries and the public, and the cost of RET. The evaluation of RET in this paper provides insights and lessons on how policy instruments are selected, designed and applied. This paper applies analytical, historical, and doctrinal legal study approaches to find out an evaluation of RET based on Australia's conditions and concerns. The analysis sheds new light on the types of instruments selected should be based in objectives, country conditions and power sector structure. It is argued that each legal and policy option must consider who will pay for the incremental costs between renewable energy and conventional energy sources, whenever appropriate

Long Term Ecological Tax Reform – Taking the Pain Out of Effectively Steering Economies Towards Profitable Resource Productivity Gains

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The usual prejudice is that ecological taxes are either effective and painful, or painless but ineffective. This paper attempts to defeat this prejudice by presenting the concept of a price signal that steadily and gradually increases at the pace of efficiency improvements. Such a scheme would send a clear signal to investors, engineers, and consumers that greater efficiency will be rewarded. This is a strong economic development approach as increasing resource efficiency, especially energy, will become more lucrative year by year, for the foreseeable future. Hence those moving early will reap significant competitive advantages. For example, if the average efficiency of the car fleet rises by one per cent in one year, a one per cent price increase of petrol at the pump would seem fair and tolerable, and would over time provide an incentive to increase efficiency. Those driving inefficient cars will pay slightly more, those driving more efficient models will pay slightly less, and those that keep pace with the average efficiency increase would pay the same.

The paper will present the case that the mutual reinforcement of resource prices and resource efficiency increases will lead to dramatic reduction in resource use, and in the case of energy lead to reductions in greenhouse gas emissions. The paper will discuss the strengths and weaknesses of such a scheme. It will emphasize the advantage of using a long term predictability horizon that involves relatively small, and less painful, annual price signals in a way that achieves the steering effect. Long term predictability will also encourage investments in resource saving infrastructure, technology, and practices. In practical terms, one would not prescribe an exact price trajectory but rather an upper and lower bound (to create an upward price corridor) within which prices can fluctuate in response to market influences. Interventions would only need to be made when such fluctuations are leaving the price corridor. It is expected that parts of the economy and society would not be able to increase energy efficiency as fast as the average and a balanced mix of support measures or exemptions may needed without destroying the incentive to innovate or adapt. The paper will also discuss the legal formats that may be best for the long term price trajectory. Referencing existing literature, the paper will also depict the extraordinary extent to which resource productivity can increase over time, thus emphasizing the revolutionary character of the scheme.

Environmental Taxes on Industries in Indonesia: A Normative Review on Respective Laws and Regulations

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& Hope Ashiabor, Macquarie University, (Australia)

Internalizing negative externalities through tax instruments has been widely discussed since its first introduction in 1920. In recent years, developed countries as well as developing countries have increasingly used environmental taxes to control pollution. As one of developing countries, Indonesia has embraced the use of indirect environmental taxes since 1997 when the government introduced the law on local taxes and charges. This law covers provisions related to environmental taxes which are imposed at local levels. Even though the 1997 Law has been amended twice in 2000 and 2009, the scope of the environmental tax bases covered in the legislation remains unchanged. However, with respect to the major environmental degradation challenges facing Indonesia, the capacity of its environmental tax legislation in addressing them is still unclear. It is therefore important to critically examine the issue to provide an understanding of deficiencies in the laws being evaluated.
This paper adopts a normative approach as the framework for analysing the issues at stake. Based on the analysis, it argues that the 2009 law on local taxes and charges does not sufficiently address environmental protection issues. Most of environmental taxes in the Law do not reflect related externalities in determining the base and the rate. A consequence of this omission is that the price signal that is transmitted through these taxes ends up being inadequate in altering polluter's behaviours. Indonesia's experience with its fuel subsidy regime will be used as a case study to highlight some of the challenges in this respect. The paper will then conclude with suggestions that policy-makers could take on board in charting a way forward with respect to some of the intractable challenges raised in the analysis

Rights and Obligations in an Open Arctic Ocean - Prospects and Future Challenges with Special Reference to Arctic Fisheries

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GUO Peiqing

The Arctic Ocean is getting more and more global attraction due to its increasingly openness caused from climate change and global warming which has offered number of opportunities, also has created a few concerns to the global community how as to govern the Arctic Ocean against growing economic activities. The Arctic Council, the only state-level international forum of eight Arctic states and indigenous peoples of the region, has been promoting regional environmental protection and sustainable development in the Arctic; while, five coastal states has formed another alliance aiming to governing the Arctic Ocean, although this alliance has not made any new legal framework yet but advocating for the United Nations Law of the Sea Convention 1982 which has granted various rights also to all other states in specific parts of a sea including the Arctic Ocean. This article searches for the rights and obligations of three different categories of states in the Arctic Ocean aiming to establish a sustainable fishery governance for the future: Arctic Ocean coastal states, non-coastal Arctic states and non-Arctic states. Evaluating the present rules and provisions of international law applicable in the Arctic, the authors try to prepare set of recommendations that fit better to the changed socio-political international scenarios.

Energy Tax Incentives (Oops, I mean "Expenditures"): Did Surrey's Tax Expenditure Concept Really Impact Tax Laws?

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Stanley Surrey's introduction of the tax expenditure concept changed the world of tax analysis. The concept of "tax expenditures" began in the 1960s when Stanley Surrey noted that many tax preferences resemble spending. In 1974, Surrey's influence prompted the United States to mandate that these tax expenditures be recorded annually as part of the federal budget. Since the birth of Surrey's concept, the United States and most other countries define tax expenditures as the deductions, credits, exclusions, exemptions, and other tax preferences that represent departures from a "normal" tax code. And yet, "normal" is in the eye of the beholder. Moreover, the two government agencies responsible for tracking U.S. tax expenditures, Treasury and the Joint Committee on Taxation (JCT), often provide different answers when asked what is "normal." Thus, Congress' annual tax expenditure reports may seem to reveal something about how the tax code has changed over the years, but do these reports ultimately provide guidance for tax reform?

This article takes a closer look at Surrey's research regarding "tax expenditure" items. To date, the U.S. Congress' attempts to reduce these departures from the "normal" tax code has not been met with great success. For instance, the Tax Reform Act of 1986, a dramatic example of tax reform, did not significantly reduce the number of tax expenditures. In addition, beginning in the mid- to late 1990s, Congress added numerous tax expenditures. Given this background, has Surrey's "tax expenditure" concept appreciably altered tax analysis? More importantly, does it constrain governmental revenue-raising to taxing those items considered part of the "normative" tax system without degrading the tax base with "tax expenditures"? By analyzing the historical tax incentives for energy, this article looks for any connection between energy "tax expenditures" and the development of energy in the United States. By analyzing energy tax incentives (under Surrey's tax expenditure thesis), perhaps we can learn whether "tax expenditures" impact tax policy (perhaps for good) and how this information can inform tax or other financial policies to incentivize environmentally-friendly tax initiatives.

Fighting for Water:
Can Federal Market Instruments Create a National Trading System in the United States?

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"The nation behaves well if it treats the natural resources as assets which it must turn over to the next generation increased, and not impaired, in value."[1]

Water likely stands first as the resource requiring national attention and protection. Water has been and continues to be wasted as though the earth's supply is endless. Yet, our usable supplies of water are diminishing or, in some cases, being exhausted. Currently, water in the United States is free for all. Yet, as water's scarcity begins to sink in, water battles are being fought in courts all over the country. Depending on where you live, you may or may not have water supplies. Local water trading schemes have evolved, but no nation-wide program exists. Other countries, Australia, for example, have instituted national water trading schemes. Water trading systems illustrate how using market forces can facilitate the highest use of water in the local economy. However, water rights issues are becoming larger geographically and economically, and current water trading schemes can only facilitate local or regional problems. The United States must consider implementing a national system to deal with water rights contests. This article considers whether a federal water trading scheme is an option for the United States and how market instruments, such as tax incentives, can facilitate the creation of such a market. Because water issues tend to be local or regional, creating and implementing a federal water trading program will be a complex task. How the U.S. federal government can feasibly implement a nation-wide water trading scheme may require innovative solutions, but tax incentive have successfully created national markets in the past. For example, the creation of a national water trading scheme through the use of federal market instruments can be analogized with the creation of the market for ethanol. None existed before the enactment of federal tax incentives. This article discusses existing mechanisms to deal with water rights issues and analyzes the implementation of a national water rights system. Ultimately, the solution to water scarcity issues in the United States will likely stem from many regimes working in tandem. A national water trading market, however, stands as a viable beginning for addressing water issues in the United States.

[1] Theodore Roosevelt, *The New Nationalism*, at 52 (1910) (Theodore Roosevelt's speech before the Colorado Live Stock Association, Denver, Colorado, August 29, 1910. This sentence is one of the quotations inscribed on a first floor corridor in the U.S. Capitol.).

The Role of Tax Incentives in Water Protection

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2015 marks the end of the United Nation's 'Water for Life' project, which is continued in 'A Post-2015 Global Goal for Water'. Significant challenges remain and one recommendation for water protection proposed by the UN is 'effective governance'. Thus governance in all areas of water usage must be examined, including energy production, which is the focus of this study.

This paper discusses the results of an empirical study of the energy/water nexus, which examined the role of tax incentives to both protect the quantity and quality of potable water, and promote innovative new technologies for water protection. Major findings are based on a methodological triangulation of 1) literature and documentation on the energy/water nexus and environmental regulations, 2) components within the Canadian tax system, and 3) case study results of water use and governance in the energy industry. The case study involved interviews with experts from various oil and gas backgrounds, including production, consulting, engineering, law, accounting, environmental regulation, hydrogeology, and government.

The study compares environmental taxes with the more traditional command and control regulations which, despite their limitations, still remain the most often legislated policy tools for natural resource protection. Various incentives available to businesses in the current tax system are examined – i.e. scientific research and experimental development (SR&ED) and accelerated capital cost allowance (ACCA) – and the potential for these incentives to account for the temporal and spatial differences between economic and environmental systems is discussed.

A major finding of the study is that a combination of environmental tax incentives for innovation, regulations, and charges (where necessary), offers a more effective regulatory system, one capable of recognizing and protecting the resilience of natural resources, thus narrowing the gap between economic and environmental objectives.

A Win-Win for GHG Emitters: Australia's Emissions Reduction Fund, Sustainable Land Use, Carbon Credits and Carbon Taxes

Vanessa Johnston,
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In 2014, the Australian Government amended the Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth) to establish an 'Emissions Reduction Fund,' ('ERF') which the Government will use to purchase 'carbon credits' from greenhouse gas ('GHG') emitters who have voluntarily agreed to carry out eligible GHG emissions mitigation projects. The Government expects that the ERF will help Australia to achieve its GHG emissions mitigation target under the Kyoto Protocol. While Australia's ERF may encourage mitigation of GHG emissions generally, it is unlikely to lead to substantial mitigation of GHG emissions from agricultural or forestry activities, or encourage sustainable land use practices in Australia: the ERF is therefore a win-win for GHG emitters in this sector. On this basis, the paper argues that it is more appropriate to use carbon taxes to encourage mitigation of GHG emissions and sustainable land use in Australia. While carbon taxes should be used to encourage GHG emitters to pay for their pollution, the laws which impose these taxes are more likely to be able to be designed to accommodate the particular characteristics of activities and GHG emitters in this sector. Consequently, carbon taxes are more likely to encourage tangible mitigation of GHG emissions and sustainable land use practices in Australia. The paper is divided into two substantive parts. First, the paper identifies how the ERF encourages sustainable land use and the reasons why it provides inadequate support for further GHG emissions mitigation in this sector. The paper then considers why carbon taxes are a more appropriate way to encourage GHG emissions mitigation and sustainable land use in Australia.

The Global Natural Resource Consumption Tax and Sovereign Immunity

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At the Rio Earth Summit in 1992, developed countries accepted responsibility for financing the climate change adaptation costs of developing countries. While a number of models have been suggested, there has been little impetus to determine each country's share of financing largely due to a lack of consensus on the interpretation of burden-sharing.

The global natural resource consumption tax is a user-pays compensatory tax model based on current consumption of natural resources and absorption of wastes as determined by the concept of the Ecological Footprint. By applying a price on biological capacity, countries whose demand for resources exceeds their own national capacity supply should pay for what has traditionally been seen as 'the global commons'. Due to its inherent simplicity, the global natural resource consumption tax can aid in economic, environmental and social policy-making and decision-making. This tax ensures that the cost of resource consumption is measured. Once measured, natural resources can be monitored, thus more effectively managed.

However, the equality of States is embodied in the international doctrine of sovereign immunity. The basic principle is that a foreign State is immune from any legal action without its consent, including taxation. Increased commercial activity by political bodies has resulted in 'restrictive immunity' whereby one country's government is able to tax the income resulting from the commercial activities of another country's government and its agencies. Thus there is precedent for limiting the application of the sovereign immunity.
Responsibility for the environment requires a global response. This requires acknowledgement of the sources of consumption and an associated acceptance of responsibility for natural resource usage and/or damage. This is achieved by implementation of the global natural resource consumption tax. The sovereign immunity principle cannot be allowed to apply.

Tax Offset for Environmental Sustainability

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This research developed a corporate tax framework that delivers sustainable economic and environmental outcomes. Companies that sustainably improve their use of environmental resources receive a benefit in the form of a tax offset. This tax offset for environmental sustainability, based on a footprint measure, is referred to as TOES.

Positioned within the sustainability and environmental policy contexts, the research highlights a gap in models or frameworks that link environmental sustainability and corporate outcomes with tax policy. Determining how the company income tax system can facilitate sustainable business practices requires an understanding of incentives as drivers of behavioural change as well as business attitudes and approaches to environmental issues and environmental tax policy. This provides the structure for the framework – how a taxation system is designed is critical for its effectiveness.

As an incentivised system, TOES has the potential to considerably increase R&D spending and investment in sustainable technologies and improve the efficiency of business processes without compromising revenue. It is structured so as to avert the trade-offs and/or conflicts normally associated with injecting environmental concerns into fiscal policies. It does this by aligning economic and environmental goals with drivers of corporate decision-making.
The framework is transparent and broad-based, able to be applied broadly across and within all industry sectors. Being a tax-offset, adoption will be voluntary thereby minimising any resource allocation bias and compliance costs. It also facilitates accountability with respect to the sustainable use of resources.

A Study on Economic Feasibility Evaluation Method of Sustainable Building Technologies Using Life Cycle Cost Analysis

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Won Yi, HwangHwan Kim & Seung Kim, Samoo Architects & Engineers (Korea)

Recently, sustainable buildings are stirring up great interests as they are a prime measure to save energy and to reduce CO_2 emissions in the building sector. Sustainable building technologies, which realize sustainable buildings, generally share the life cycle with buildings. Therefore, the economic benefits by reducing energy consumption and CO_2 emissions that are accumulated during the operation stage of buildings may dictate the feasibility of sustainable buildings. Accordingly, the economic analysis of sustainable building technologies should include life- cycle energy and environmental costs which can be saved compared to conventional technologies. This study aims to present an evaluation method of economic feasibility of sustainable technologies using LCC Analysis, in which energy cost and carbon emission trading cost are considered. It is expected that the result can be used as a decision making tool for selecting sustainable building technologies during the initial building design stage.

Renewable Electricty Support in the EU – What Lessons can be Learned??

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Renewable energy technologies play a decisive role for climate change mitigation and environmental protection but also in the context of energy security and cost competitiveness (e.g. Europe 2020 strategy). So far, renewable energy technologies are generally not cost competitive compared to fossil energy technologies. Therefore the EU and its Member States have introduced policy targets and support schemes for achieving a certain share of renewables in total electricity supply.
The support instruments are either price-based (e.g. feed-in system, bonus system) or quantity-based (quota system, tendering scheme). According to economic theory, the two types of instruments deliver the same result, they are both environmentally effective (i.e. they achieve a predefined RES target) and economically efficient (i.e. they achieve this target at least cost). However, in the real world, the different instruments may result in different outcomes: Price-based instruments provide (higher) certainty regarding the price level, while quantity-based instruments provide (higher) certainty regarding the effective diffusion of renewable energy technologies.
Renewable electricity support schemes differ between the European countries. Feed-in tariffs and feed-in premiums are the most relevant support schemes in the European Union; often they are complemented by other instruments such as investment grants, tax exemptions or fiscal incentives. Quota obligations are implemented in five EU Member States. Frequently, this instrument is also combined with feed-in tariffs for specific technologies and/or plant sizes (e.g. the UK offers feed-in tariffs for small projects below 5 MW). In addition to the instruments chosen, the support level for renewable energies also differs significantly between EU Member States. Furthermore, the support schemes have been frequently adapted by Member States not only with respect to the support level but also with respect to the predominant policy instrument.
This paper presents an overview of the development renewable electricity support schemes in EU Member States. Based on empirical data as well as on the available literature, the schemes are assessed in terms of their environmental effectiveness and economic efficiency and policy recommendations are developed.

The EU Emission Trading Scheme: Allocation Patterns in Phase 3

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Since its start in 2005 the European Emission Trading Scheme (EU ETS) that covers almost 50 percent of the EU's greenhouse gas emissions is the key climate policy instrument in the European Union. Phase 1 (2005 – 2007) and Phase 2 (2008 – 2012) were, however, characterised by a substantial excess supply of allowances. In Phase 1 this excess supply was the result of (partly substantial) over-allocation; in Phase 2 it resulted from a sharp drop in emissions due to the economic crisis.

After the evaluation of Phase 1 essential changes in the design of the EU ETS were adopted for Phase 3 (2013 – 2020). One major change compared to the previous trading periods entailed an EU-wide cap instead of national allocation caps. Furthermore, auctioning of allowances has gained in importance compared to Phase 1 and 2 where allowances were predominantly distributed by grandfathering: Since 2013 the power sector generally does not receive free allocation anymore; sectors potentially exposed to carbon leakage receive 100% free allocation based on benchmarks; and other sectors receive 80 percent free allocation in 2013 based on benchmarks (the share of free allocation is subsequently reduced to 30 percent in 2020).

Due to the large number of allowances banked from Phase 2 to Phase 3 (mainly European allowances but also international allowances), there is still an oversupply of allowances in the market despite restrictive free allocation and a declining emission cap until 2020.
The paper focuses on the sectoral dimension of free allocation in Phase 3 of the EU ETS. In an empirical analysis the development of free allocation and emissions is assessed on the sector level using data from the EU's emission registry, the European Union Transaction Log. The analysis shows that despite the restrictive allocation procedure, free allocation exceeded verified emissions in the first two years of Phase 3 in seven out of 13 sectors (i.a. cement and lime, iron and steel, pulp and paper) on the European level and reaches up to 20 percent of sectoral free allocation. The excess supply of free allowances on the sector level contributes to the persistent low carbon prices in the EU ETS and prevents it from establishing a clear price signal for the investment in low carbon technologies

Market Based Mechanisms for Dummies: Lesson 101 how to Destroy a Market Based Mechanism

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The Renewable Energy (Electricity) Act 2000 (Cth) (the MRET Act) established the legislative framework for Australia's mandatory renewable energy target scheme. The MRET scheme created a market based mechanism based on the creation, trading and extinguishing of renewable energy certificates. These certificates are used to avoid or reduce the amount of renewable energy shortfall charge that liable entities who acquire electricity are obliged to pay. Liable entities will generally acquire the certificates by purchasing them on the market. Certificates are created by entities that generate power from accredited power stations using eligible sources of renewable energy where the amount generated exceeds the relevant eligible power base line. Certificates can also be created for approved solar water heaters and small generation units. Originally established to spur investment in renewable energy generation in Australia this core policy objective has been undermined by a constant stream of government sponsored inquires reviews and legislative amendments which have created uncertainty and undermined investor confidence in the renewable energy industry. The Australian experience demonstrates a fundamental lesson that the best way to destroy a market based mechanism is to create a continual climate of uncertainty. This paper traces the history of reviews and amendments to the MRET scheme to demonstrate this fundamental lesson in market based mechanism design.

Current Status and Issues on the Forest Environmental Tax for the Preservation of the Local Resources in Japan

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Some of local governments in Japan (Since 2003, 29 prefectures) have introduced economic instruments, such as forest environmental tax, for the preservation of the local resources.

The forest environmental tax is to ensure financial resources for the preservation of the forest and is imposed on residents, because they enjoy the public functions such as watershed with the forest, improvement of water quality and the prevention of landslides.

Such an approach, not only securing financial resources for regional resource management, but also residents deepen the understanding of nature and the region resource. Thereby, re-discovery and effective use of the local resources by residents is promoted, and it leading to regional development and activating the regional economy by securing employment.

In this paper, we examine the current state of the forest environmental tax that has been conducted in Japan, and the conservation status and the case of effective use of local resources by using its tax revenue. Furthermore, we will look at the current situation of ecotourism that utilize local resources, and the environmental education effect of ecotourism

The Ability of Environmental Taxation in Aiding the Sustainability of Natural Resources whilst Reducing Dependence on Depleting Conventional Income and Profit Based Sources of Public Revenue: A South African Context.

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The sustainability of South Africa's natural resources is under severe threat, intensified by set environmental sustainability objectives not being achieved. 82% of the country's main river ecosystems, 34% of its terrestrial ecosystems and 65% of its marine biozones are threatened, while 50% of its wetlands have already been destroyed. Such measures of environmental sustainability emphasizes the country's ecological carrying capacity being exceeded and prompts the explicit need for vigorous effective policy that can prevent the excessive depletion of natural resources.

The paper proposes that rather than simply banning destructive behaviour, environmental taxation in South Africa can be used as the least authoritarian and invasive tool to limit the burden on the sustainability of natural resources emerging from economic development and social pressure. Such a system of taxation encourages new forms of green economic activity, shifting the focus away from the abusive consumption of natural resources whilst reducing the dependence on the distorting taxation of income and profit. This "double dividend" aids in reconciling modern consumer economies with sustainable ecosystems.

The current South African taxation system however focuses on taxing activities stimulating the economy, such as employment, saving and investing, while not taxing activities that deduct value from the economy through using limited natural resources, pollution and congestion. The penalisation of people's efforts to produce income and profit, rather than their use of resources, perversely encourages the over-usage of resources.

Based on the literature surveyed, alternative ways to sustainably fund the public purse is urged by the global marketplace providing the perfect conditions for procurement of global knowledge, skills and capital. Environmental taxation has the potential to raise more tax revenue than depleting conventional taxation whilst contributing to the conservation of our planet.

Tax Fuel Or Miles

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The United States faces an infrastructure crisis. Road are crumbling and bridges are falling down. The United States has funded its transportation system with a dedicated tax on gasoline, which has not been increased for over a decade. The federal excise tax on gasoline is $0.184 per gallon, and the federal excise tax on diesel fuel is $0.243 per gallon. States also impose fuel taxes, and the average gasoline tax in the United States is $0.36 per gallon. As motor vehicles have become more efficient, they use less fuel, which means less revenue for the Highway Trust Fund. The federal government promotes vehicle efficiency through several policies, including the Corporate Average Fuel Efficiency (CAFE) standard and tax incentives for hybrid and electric vehicles. Inefficient vehicles are clearly not good for the environment, but it is far from clear whether enhancing the efficiency of vehicles has helped the environment. Some studies conclude that fuel efficiency leads to driving more miles, which reduces the environmental benefit of efficiency.

Basic economic principles show that increasing the cost of an activity reduces the amount of the activity. Thus, increasing the rate of the gas tax would tend to decrease driving, and thus reduce greenhouse gas (GHG) emissions. Increasing the rate of the gas tax would tend to reduce the driving of inefficient vehicles more than the driving of efficient vehicles, thus enhancing the effect of incentives for efficient vehicles. However, some have expressed concern about the fairness of increasing costs at a steeper rate on those who must drive high fuel use vehicles, such as trucks. Another way of allocating the cost of highway and road use is by taxing the miles traveled rather than the fuel used.

A shift from taxing fuel to taxing miles traveled creates many policy implications. While fuel taxes are easily applied at the point of sale, taxing miles traveled requires measuring miles traveled. The taxing authority would have to either check odometers or install tracking devices on vehicles to track the miles traveled. These methods can be cumbersome and invade the privacy of drivers.

The funding structure for highways and transit is not working for today's transportation needs. However, the partisan divide in the current U.S. Congress has resulted in legislative gridlock. This paper will consider the benefits and detriments of the different funding approaches for transportation needs.

Government Reporting on (Environmentally Harmful) Subsidies - What Works, What Is Effective?

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Environmentally harmful subsidies, particularly fossil fuel subsidies, have long been identified as a major roadblock for sustainable development. But in spite of numerous international commitments by governments and increasing public attention, progress to date in reducing them has been small. An extensive body of academic research in economics and political science conducted in recent years has shown that one of two main obstacles to reform is a lack of information regarding the magnitude of subsidies (the other one being the complex political economy associated with them). The way in which governments report on subsidies and assess their impact shows significant variation – not only between industrialized and developing countries but also for example among OECD countries. The identification and measurement of subsidies is sometimes methodologically challenging and usually highly political. A need for more systematic monitoring and impact assessment exists in developing and industrialised countries alike, but institutional challenges and capacity bottlenecks tend to be more severe in former. This paper presents different approaches to the monitoring of and reporting on (environmentally harmful) subsidies by government agencies and discusses them in terms of their political effectiveness and practicability. Specific attention is given to the applicability also in countries with lower governance capacity. To this end, the paper draws on experiences from German bilateral technical cooperation programs.

Mining the Air and Minding the Consequences: A Dark Cloud Tax

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The extraordinary electronic revolution over the past two decades continues to accelerate each year and seems here to stay. In 2014, 204 million emails were exchanged globally every minute. An increasing portion of the personal communications, commercial transactions and data storage now occur in "the cloud." In 2013, the majority of businesses in the United States relied on shared or private clouds. According to a 2014 study, cloud-based Amazon sold $272,000 of merchandise per minute.

An important, invisible natural resource provides the foundation for this e-revolution—the air and its spectrum. The cloud could not exist without the ability to send data over the airwaves. Yet the cloud generates pollution. Its earth-bound data centers are often driven by electricity from power plants that generate greenhouse gas emissions. Greenpeace estimates that the cloud would rank fifth among nations in electricity use if it were a country. Mining the air to build the cloud will leave its environmental footprint, much as mining for ore leaves tailings.

This paper explores the notion of imposing an environment tax on the cloud to recognize its darker side—a "dark cloud tax." Using the United States as a case study, it investigates how one might design an environmental tax on cloud services to reflect their contributions to greenhouse gas emissions. It considers underlying theory and implementation issues, such as who should pay the tax, how the revenue might be used, and the relationship of a dark cloud tax to other policy instruments. It argues that now is the time to consider how environmental taxation might help shape this new e-revolution from the start—not after it reaches maturity, as happened with the Industrial Revolution and its fossil fuel emissions

The Tale of Two Taxes: The Fate of Resource Tax Reform in Australia

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The attempt by the Australian government to impose a new mining tax in 2010 created an industry backlash, divided political parties, the media and the general public, and led to the departure of a prime minister from office. Yet a similar tax in 2012 was expanded from the offshore oil and gas sector to onshore hydrocarbon projects without much industry opposition and with unified political support.

This research provides insights into this taxation policy dissonance, through the examination of the economic theory behind both taxes, the comparison of the policy development for both and the role of the media in influencing the policy outcomes, so that we can have a greater understanding of this interplay.

The failure of the two mining tax proposals, the Resource Super Profits Tax (RSPT) in 2010 and the repeal of its successor the Mineral Resource Rent Tax (MRRT) in September 2014, contrasted with the successful expansion of the Petroleum Resource Rent Tax (PRRT) from offshore oil and gas projects to onshore in 2012.

A review of this subject has revealed a lack of comparative analysis of the contrasting outcomes of the PRRT and MRRT, which have the same economic theoretical DNA.
This research identifies where the policy failure of the RSPT and its successor the MRRT occurred and determines the factors, including that the lack of initial government consultation with stakeholders was a major contributor to the policy failure. The lack of information allowed the mining sector to fill communications void with an anti tax campaign that was similar to the one fought by the oil and gas sector in the 1980s when the PRRT was first proposed. In that case, the Labor government spent two years consulting with stakeholders, whereas Prime Minister Kevin Rudd unveiled his tax about six months before an election. In turn, this set of events influenced the outcomes that has resulted in a policy paradox on resource taxation in Australia.

Reforming Australia's Luxury Car Tax to Improve Vehicle Energy Efficiency

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The Australian government needs to exercise "political will" like many other countries that have reduced or removed such high carbon emitting vehicles. For example the EU introduced effective policy measures that have successfully achieved an average emissions for new passenger vehicles of 127 g/km in 2013 before 2015. Most Member States did not introduce new taxes, but reformed existing policy measures or introduced incentives and or penalties . Such as reforming existing vehicles taxes (stamp duty and registration fees) as a measure to shift consumer's preference away from SUV's and larger higher carbon emitting vehicles by basing the duty on new vehicles CO2 emissions.

In Australia, to reform vehicle taxes would require all levels of state and territory governments to agree to reform their existing vehicle purchase tax/stamp duty; then to develop jointly a uniform model of CO2-based vehicle taxes or an alternative model; agree on the rate of tax that provides a strong price signal to influence car purchasing trends to low emission vehicles. To unanimously agree to such reforms may not be possible, given the political differences between state and territory governments.

The alternative is to reform the Luxury Car Tax (LCT) to a Fuel Energy Tax . The LCT is a federal government tax that can be imposed on all new vehicles sold in Australia. Any reforms of the LCT will not require approval from state and territory governments. Strong lobby groups argue the tax is a "large part" responsible for the higher prices of new vehicles and support the removal of the tax.

The Australian Governments' Tax Reform White Paper (released in April 2015) does not agree to removal of the tax but questions what changes, if any, would "…make a better tax system to deliver taxes that are lower, simpler, fairer?"

The paper considers the reforming the LCT, a fiscal tax to an environmental tax that has the primarily objective of collecting revenue but simultaneously encouraging a shift in car purchasing trends and meet the G20 Action Plan to "improve vehicle energy efficiency and emissions performance."

The Latest Trends in The Greening of the Tax Systems in Japan and Comparison with EU Countries

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In these years, Japan has implemented various measures on taxation, including the introduction of Tax for Climate Change Mitigation (so-called carbon tax) in 2012 and greening vehicle taxation. However, Japan's CO2 emissions from energy use reached a record 1.224 billion tonnes in FY2013. Japanese government is expected to mobilise every possible means in order to reduce CO2 emissions and taxation policy is one of the tools effective for this purpose. Therefore, to suggest future direction of greening Japan's taxation system, we compared environmental taxes in Japan and four EU countries (Finland, Denmark, Germany and the UK), which are environmentally-advanced countries on taxation. Firstly we summarised the latest trend of environmental taxes in Japan then compared it with experiences in EU countries. For energy taxes, tax rates on fuels in Japan are lower than those of EU countries and, in all the four EU countries, tax rates on fuels have been raised year by year but in Japan, for example, gasoline tax rate has not been increased since 1993. When it comes to carbon taxes, differences between Japan and EU countries are tax rates and use of revenues. In Japan, carbon tax rates are relatively lower than EU countries and tax revenue goes into special account and the revenue is used for promoting renewable energies and so on, while in EU countries, all the revenues go into the country's general budget. Thus in Japan, emissions reduction effect of putting price on carbon is relatively lower than the effect of revenue use, which is -0.2% and -0.4 to -2.1% respectively. For vehicle taxes, tax bases of Japan's vehicle taxes are acquisition price, weight of vehicles, etc., which is different from EU countries; fuel efficiency. Thus Japan's vehicle taxes are not functioning as a driver to promote purchasing more energy efficient vehicles. Based on the results of these comparisons, we expect the Japanese government to put higher price on fuel consumptions to track the international trend of carbon pricing and thus reduce energy consumption, and to introduce CO2-based vehicle taxes to increase the share of environmentally-friendly vehicles in Japan.

Regulation Of Ship-Sourced Carbon Dioxide Emissions: The Creation Of Economic Instruments

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The challenge of reducing greenhouse gas concentrations captures all aspects of the energy, industry and transport sectors including the reduction of carbon dioxide emissions from international shipping. The international shipping sector underpins the global economy and is the most cost-effective and environmentally efficient of all modes of transport contributing approximately 2.7 per cent of the total global carbon dioxide emissions. However, as international trade increases so will commercial shipping: it is thus necessary that the international shipping sector reduces its carbon dioxide emissions.

The International Maritime Organization has been developing rules concerning the reduction of the international shipping sector's carbon dioxide emissions. Despite rules concerning the technical and operational aspects of carbon dioxide emission reduction having been successfully adopted, the creation of economic instruments and a move towards 'low-carbon shipping' have proven more difficult. Economic instruments provide financial incentive to promote implementation of technical and operational measures already adopted. There are two distinct approaches reflected in the proposals under consideration by the International Maritime Organization. The first is the fuel pricing approach in which a set amount is levied when purchasing fuel and is thus a part of the fuel pricing system. The second approach is an emissions trading system for the international shipping sector where from a total calculated amount a carbon dioxide emission ceiling will be assigned to a particular ship and any difference will be allowed to be traded with other ships, and perhaps even with other sectors.

In establishing economic-based instruments, however, a significant rift on carbon pricing has emerged within the International Maritime Organization. At the centre of the debate are complex legal issues surrounding the role and responsibility of States to reduce their carbon dioxide emissions. Developing States rely on the international law principle of common but differentiated responsibilities and respective capabilities, and question the appropriateness of uniform international shipping standards which they view as economically disadvantageous. It is against this background that the paper will discuss the current options existing for the International Maritime Organization in the creation of economic instruments as a mode of regulating ship-sourced carbon dioxide emissions.

Australian Gas Resource - The Need for Regulatory and Fiscal Reform

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Australia has a large gas resource endowment and provides around 20 per cent of all final energy consumption in the Australian economy. Australian gas exports have increased as a result of strong global demand and high prices for liquefied natural gas (LNG) and as a result, the domestic gas market is under considerable pressure from higher gas prices. Moreover, the Australian Government does not have a domestic gas reservation policy for its offshore resources or national export controls for LNG.

The Council of Australian Governments (COAG) through its ministerial council known as COAG Energy Council released the Australian Gas Market Vision in December 2014, recognising that there is a significant transformation occurring in the gas market and that there is a need for the Australian Governments to guide gas market development and provide certainty for all stakeholders. The COAG Energy Council has also recently rejected the need for government intervention in reserving gas for domestic use. Instead the Australian Government has released an Issues Paper in April 2015 to seek comments on the performance of current governance arrangements for energy market, including the policy, regulatory and operational environment for the national energy market.

It is the purpose of this paper to explore the status of Australian gas resource and the domestic and export market and determine whether the current regulatory and tax regime including tariffs and excise on natural gas products protects the natural resource of gas in Australia. This will include an examination of the sustainability and the precautionary principles endorsed by the global community in order to determine whether the Australian Government has an obligation to preserve gas reserves for future generation. The paper also explores the need to preserve and promote gas as an energy source for transportation fuel. In this respect, the Australian Government Report entitled, Strategic Framework for Alternative Transport Fuels state that from now to 2030, Australia has an opportunity to lay foundations for a market-based diversification of its transport fuel mix. Compressed Natural Gas (CNG) and Liquefied Petroleum Gas (LPG) could be the alternative fuels for transportation. Both CNG and LPG are products derived from natural gas, which is cheap, abundant and widely available in Australia. Regulatory and fiscal reforms required to promote gas as a transportation fuel in Australia are explored in this paper.

Is the Aviation Sector the Lucky "Bad Guy" in The Fight Against Climate Change? Some Fiscal and Economic Thoughts

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Aviation is one of the energy-intensive sectors that significantly contribute to climate change. This paper analyzes the legal framework surrounding taxes applied to international civil aviation in order to determine the extent to which green taxes could be adopted so as to internalize the environmental costs of air transportation.
First, this paper discusses the taxes that are currently applied to international civil aviation. The objective is to list these taxes and describe their design from an international tax law perspective.

Second, this paper compares the current taxes applied to international civil aviation with the taxes that are applied to other transportation means. This second part highlights the various tax advantages that civil aviation enjoys under the current system in comparison to road and ship transportation. It also includes some economic background information comparing the final prices of the various modes of transportation and the emissions released per euro cent and per kilometer.

Third, this paper analyzes the legal framework surrounding taxation on international civil aviation and focuses on the main practical and legal limits concerning the introduction of taxes aimed to counteract the comparative advantages that international civil aviation enjoys. For example, the third part analyzes article 24(a) of the Chicago Convention on international civil aviation (7 December 1994) that provides for the tax exemption of fuel "on board an aircraft of a contracting State, on arrival in the territory of another contracting State and retained on board on leaving the territory of that State".
Finally, in light of the limits of the current legal framework, this paper makes various proposals in order to level the playing field between international civil aviation and other transportation sectors and (better) internalize the negative environmental effects of international civil aviation.

Internalising Externalities in Market-Based Approaches to Pest Animal Control

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The term "pest" animal refers to native and non-native species that conflict with human land and water uses and/or impact on vegetation and conservation of natural resources. For some species, such as camels and dingoes, the negative impacts on biodiversity, Indigenous cultural sites and infrastructure can be quite significant and are likely to be exacerbated as the effects of climate change become more pronounced. To date, the eradication and control of pest species has traditionally centred on "technical" solutions as a means of killing as many animals as possible in order to eradicate or reduce population numbers. However, these procedures have largely not resulted in long-term environmental benefits and have not sufficiently engaged with the social aspects of pest species control, including community viewpoints and animal welfare. Accordingly, regulators are exploring whether market-based mechanisms, such as commercial harvesting, are a more appropriate regulatory response. One example is the Rural Solutions SA draft Recommendations for a national market based approach to feral camel removal which reported on three market-based instrument trials and proposed a national model. This paper evaluates this standpoint by analysing reviews of the existing commercial kangaroo industry and selected pest animal management plans that focus on culling or harvesting as a first point response. It is argued that policy-makers need to be cautious about pursuing market-based mechanisms based on harvesting because these pathways potentially replicate the failures of the current regime by envisaging a narrow view of pest animal management. In particular, harvesting may lead to the creation of an industry whose aims and objectives focus on the sustainability of that industry, while tending towards the externalisation of broader environmental and social outcomes. Consequently, if harvesting is to be considered an effective conservation tool, these broader outcomes need to be internalised.

Picking Winners and Losers: a Qualitative Examination of Tax Subsidies to the Energy Industry

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The shibboleth that "government should not be picking winners and losers" has dominated the public discourse in policy deliberations over subsidies to renewable energy. This way of framing the debate has obscured both the economic theory undergirding the subsidies and the nation's long history of support for fossil fuels. The United States has been picking energy winners and losers for over one hundred years. While most forms of government support for energy and environmental policy have been examined in some detail in the United States, tax subsidies have received less attention, in part, because of their complexity and obscurity. Furthermore, given that Congress has failed to pass any significant environmental regulation in over 20 years, energy tax subsidies are ripe for review. This article contributes to the literature in three ways. First, the article examines the economic situations in which government intervention is justified and considers the government's choice of policy tools for address market failures. Second, the article describes the tax subsidies to both fossil fuels and renewable energy resources and evaluates the subsidies in light of economic theory. Third, the article describes the very different market trajectories for the two sets of subsidies and explores the reasons for the divergence. The article examines the subsidies on a qualitative basis, reviewing their structural differences, their history, and the political economy associated with their development. Finally, the article argues that the way Congress structures its subsidies can determine whether new technology is a winner or a loser

Just ETS? An Inquiry into the Theory and Practice of the Fairness of Carbon Markets

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Besides effectiveness and efficiency, social justice plays a leading role in sustainable climate policy. From the beginning, social justice has been a core issue in the sustainability debate, and recently international and domestic climate policy debates have raised questions of a fair de-carbonization strategy. As the cost burden of even efficient but still sufficiently stringent climate regimes is expected to be increasing, social justice issues have to be considered more thoroughly.

While still not the dominating force, market-based climate policy instruments have become more popular recently, and for economic and environmental reasons they have to play a leading role in the future. Carbon cap-and-trade has been spreading globally on all government levels, and linking domestic programs is still a relevant supplement to global climate action. However, there are huge differences in the design of carbon markets (coverage, initial allocation, revenue use etc.) with respect to social justice issues. But while economics has analyzed environmental and economic questions intensively, social justice has been widely neglected.

So how can social justice criteria for carbon markets be defined, which design recommendation follow, and how can the most important programs to date be evaluated on social justice grounds?

In order to answer these questions, while also surveying the positive literature, we mainly discuss differing normative concepts on social justice (intra- (national, international) and intergenerational justice, procedural vs. result-based justice, justice in transfer and acquisition vs. justice within allocation and redistributive justice, “why equality”, “equality of what)” and then derive concrete criteria for the design and the evaluation of carbon markets. Applying these criteria, we evaluate the design and distributional effects of relevant carbon markets in Europe, North America, and Japan.

We argue that social justice is a key issue for sufficiently ambitious and politically feasible climate policy programs. And still convinced of the importance of market-based instruments for a sustainable climate policy regime, we provide a framework for designing socially just carbon markets and for evaluating existing programs on social justice grounds. We also show that, while carbon markets in the EU, the US, and Japan differ greatly in dealing with social justice issues, all programs can be significantly improved. Altogether, we newly add a theoretically founded social justice component to carbon market design and evaluation research and policy.

Re-examining a Role of Electricity Retailers

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In 2000, a controversy arose over the need for "electricity retailers" between Joscow and Littlechild. Joscow asserted that electricity should be directrly traded between producers and consumers without going through retailers, especially for residential customers. On the other hand, Littlechild argued hard against Joscow's view in his paper "Why we need electricity retailers: A reply to Joskow on wholesale spot price pass-through." His key portion of argument is that retail competition brings added-value when precisely capturing the character of wholesale market, retail market and electricity services.

Could electricity retailers improve social welfare, consumer surplus and producer surplus? Or do they just hinder the trading? Now, on the background of the movements toward electricity liberalization in many countries, their argument becomes increasingly important.
While earnest discussion have been taken place, what is analytically shown is still few. In this paper, we therefore re-examine a role of electricity retailers within a simple economic model. Firstly, we summarize the argument between Joscow and Littlechild. Secondly, we develop a simple economic model and examine each point of the argument respectively. Finally, we show some economic conditions in which electricity retailers actually add value on electricity trading and further discuss applications to the argument over the ongoing electricity liberalization in Japan.

Fossil Fuel to Renewable Energy: Comparator Study of Subsidy Reforms and Energy Transitions in African and Indian Ocean Island States

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& Francois Fortier, United Nations Office for Sustainable Development (USA)

This paper analyses the impacts of fossil fuel energy in the multiple dimensions of sustainability, modelling the relationships, externalities, and opportunities that a transition to a new energy paradigm can offer, based on energy conservation, efficiency and low-carbon renewable sources. It first explores the "sustainability doughnut" as an integrative model, which facilitates the overlaying of policy choices, including energy-related ones, with the economic, social and environmental sustainability impacts they have. This provides a cogent framework for the comparison of the fossil fuel and renewable energy paradigms, highlighting their costs and opportunities.

Based on this modelling and rationale, the bulk of the paper then turns to analysing the political economy of fossil fuel subsidy reform and renewable energy transition in the context of island states, with particular reference to Small Island Developing States in the Indian Ocean and Atlantic African coast. With policy-relevance as key objective, the paper makes a series of general and country-specific recommendations, underlining the most important policy areas of fossil fuel to renewable energy transition in the island states that participated in a capacity building workshop organised in Mauritius in 2014.

Given that most island states have market economies, prices are crucial for investment and consumption decisions. Influencing prices via taxes and subsidies provide strong leverages for governments to change behaviour and reduce fossil fuel consumption. Moral appeals, information campaigns and awareness-raising may be important, too, but often not as effective as price signals, a key factor in household and industrial decision-making.
The challenge for island states today is to identify how best they can benefit from the falling price of renewable energy, as soon and as much as possible.

To create an economic climate which fosters FFRE transitions, island states need to adjust energy pricing that matches their national context by means of environmental fiscal reform. Increased domestic revenue mobilisation – through environmental taxation and subsidy reform – can promote the fossil fuels to renewable energies transition agenda by increasing fiscal space and delivering much-needed revenues to meet critical spending needs.
This could include a standardised levy per overnight stay or an infrastructure service charge paid on entry or exit. While unilateral measures may encounter political resistance among industry stakeholders, coordination between major destina¬tions e.g. in the Indian Ocean basin, will partly address concerns, and avoid a race to the bottom in the tax treatment of the two sectors.

Italian Environmental Taxation 2015: A Real Green Revolution???

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The law n. 23 of 23th February 2014 gives to the Italian government the faculty to do an important environmental taxation reform. The way used is the legislative delegation system.
The delegation Law fixes principles and directives to be observed by implementing rules (legislative decrees).
First of all it's important to point out that an environmental record is included in a great Italian taxation reform.
First commenters say that is not a full reform but a "radical restructuration" of Italian tax system.
This is the first time that environmental taxation has been considered under a global and systematic approach and not only by "spot" tax law.
Furthermore in the law there is the most important target: budgetary equilibrium. So no more taxes are requested to tax payers. This could create some problems in introducing tax law that reduces tax income. It will not be possible.

The proxy law, as told, specifies as fundamental the European principle, the Italian constitutional principles and the ones stated in the Italian "taxpayers chart".
Implementing rules has to be coordinated with Italian rules regarding tax federalism.
And the second target is the simplification in tax payment and not only in tax assessment.
Others previsions regard single topical legal subjects.
In fact detailed principles and directives criteria are introduced in every single article of the delegation rule.

The environmental reform is introduced by art . 15 of law n. 23 of 23th February 2014 as to introduce "new forms of taxation" in according to the European policies and measures to a sustainable development and to improve "green economy".
The new reform is inspired to the following principal and general criteria as to "yawing" to sustainable consumptions and productions.

Some detailed rules regard electric energy and energy products taxation, in particular having regard to double dividend principle. Some other (rules) regards the reduction of direct taxation to decrease labour costs involved in green economy, of enhancing and improving technologies and products with low carbon content.

Moreover, the Italian legislator should improve financing subsidies to production of energy from renewable sources.
Targets are really ambitious but the delegation law fixes a term to adopt implementing rules. After the expiry term nothing will be possible.
It is important to point out that, as we told in the past congress in Kyoto, an important reform has been introduced in the field of local taxes. This reform will be changed again.
In September more details shall be available and a lot of novelties will interest environmental taxation in Italy.

BY A “WATER FOOTPRINT” TAXATION. CASE STUDY

María Sotelo Pérez
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The water footprint is an indicator that is having considerable importance in the so-called "new water culture, to understand the use of the water used by humans, from a global perspective. Integrate different types of water uses and related impacts both qualitative and quantitative, generating new forms of research in the use, management and conservation of water. Synthesizes the production and consumption of raw materials. Also, note that through his research we can approach the knowledge of a lot of "hidden" issues in the study of water (v.gr.: the importance of imports of food or waste from food, where always directly or indirectly involved water). Both the OECD and the European Environment Agency have identified environmental taxation as a key area of environmental policies. The entire OECD and the European Union have taxes specifically designed to reduce impacts on the environment. The result is that overall environmental taxation has a more important compared to what happens in countries like Spain weight. We can emphasize that there have been a lot more activity at the state level and at the regional on environmental taxation in recent years; practically, all Autonomous Communities have adopted royalties for the use or water sanitation, but also some have gone beyond, taxes creating different forms of pollution and various uses of natural resources. In this research we realized the need to approach the study of the possibilities posed by new metric water, from a fiscal perspective, from the idea that we can all get involved in resolving the water crisis.
Keywords: Green Taxation, Water Footprint, New Water Culture, Spain.

Tax and the Environment: An Evaluation Framework for Tax Policy Reform

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Our presentation provides the background for a project which aims to develop a tax policy analysis framework that can be utilised to evaluate the effectiveness of Environmental Tax Measures (ETMs), building that framework from a critical assessment of the menu of factors advanced as possibilities in the literature.

The ETMs here are more commonly referred to as tax concessions or subsidies and are a form of tax expenditure (revenue foregone) used by governments to intervene in markets and influence the behaviour of particular taxpayers or industries. Such concessions need to be evaluated to assess their efficiency and effectiveness among other criteria. One important consideration is whether the design of the measure could be improved to ensure accurate targeting. The OECD has stressed accurate targeting of measures to encourage environmentally responsible behaviour and the need to limit investment in direct tax concessions to those "which will have a beneficial environmental impact", at the same time noting the difficulty faced by "revenue authorities to verify this cheaply and effectively".
This study is a first step toward developing a tailor-made tax policy analysis framework for evaluating the effectiveness of ETMs. It aims to provide an initial assessment and ranking of a set of evaluation criteria, identified through the literature, for the purpose of developing such an evaluation framework. This will be achieved by employing a Delphi Study undertaken in the lead up to GCET16 and during the Roundtable on 26 September 2015.

The Delphi method aims to obtain the most reliable consensus of a group of experts (the Reference Group drawn from expert delegates of the GCET16) through a series of questionnaires, usually two rounds, with feedback to participants (members of the Reference Group) following each round. After the first round of questionnaires, which will be distributed electronically, these experts are encouraged to revise their previous answers in view of 'collective intelligence' so that the panel may move to a consensual view. While the Delphi method is traditionally based on anonymity, the Group Delphi assembles the expert panel (for half a day in this case) to take part in a structured communication process using rotating subgroups to address the relevant questionnaire(s) (applying Likert scaling) and open questions, building consensus and defining disagreement by employing plenary discussions between iterations to foster peer review. The Roundtable will use a single group and two plenary discussions to refine and rank the evaluation criteria.

Lessons from Green Growth Strategy of South Korea – Australia's Trading Partner

Seck Tan,
National University of Singapore (Singapore)

The aim of this paper is to highlight the green fiscal reform of South Korea as a new national paradigm. Green growth strategy ensures that natural resources realize its full economic potential and is maintained by regular investments. This illustration employs a macroeconomic analysis to internalize the utilization of the environment as a capital; and uses environmental policy (environmental taxation) as a source of funding to re-invest and maintain the environment.

The free trade agreement signed between South Korea and Australia in 2013 was one of the best trading deals Australia had witnessed – implying that exporting of Australia's agricultural products to South Korea are free of tariffs. Although Australia's national interests to support local jobs and maintain employment opportunities have been advanced, the increase in growth of agricultural products has advanced the rate of environmental degradation. The natural ecosystem is a resource and provides a service towards crop production hence; it must be maintained for future crop production. For growth to be sustainable there must be a balance between economic growth and protection of natural resources. In a simple macroeconomic framework, the effective use of environmental taxes as policy intervention would differ when the environment has been explicitly considered.
Australia can draw on lessons from her South Korean trading partner where the shared goals of development and environmental sustainability are attained for green growth. The development of sustainable policies requires the appreciation that environmental taxation be considered in tandem with other sustainable measures by policy makers in order to achieve green fiscal reforms.

A Tax Policy Incentive Policy to Support Water Conservation and Protect the Ecosystem

Rahmat Tavallali,
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The drought in the southwestern part of the United States is now in its fourth year. Many cities are running out of water. Ranchers are struggling to feed livestock and farmers are having difficulty in raising crops. The entire area has become extremely vulnerable to wild fires.
While farmers are having difficulties in watering their crops and environmentalists are working to protect the ecosystem, the Governor of California has ordered statewide water restrictions. The California State Water Resources Control Board has been ordered to impose as much as 36 percent reductions in water consumption compared with 2013 and 25 percent reductions on 400 local agencies that supply water to 90 percent of California residents.
Despite these mandatory water restriction policies, it is not clear that these measures will decrease water consumption enough to avoid serious water shortages. Considering this emergency situation, this paper will examine the use of tax incentives to curb water consumption versus the currently planned policies of regulations, fines, and penalties by state water agencies.

Reducing Emissions and Promoting Energy Efficiency in Residential Homes Through Reform of Environmental Taxation Legislation

Jon Truby,
Qatar University, College of Law (Qatar)

Residential homes in the United Kingdom, using over 25% of energy nationwide, are banded according to their energy efficiency for informational purposes on energy costs. This provides an incentive – albeit a limited one - on owners and tenants to upgrade properties in order to lower emissions to reduce the cost, but does not affect the property's tax liability. For builders of new homes, little incentive exists to encourage the construction of low emissions homes or to design homes capable of micro-production of renewable energy to reduce dependence on fossil fuels. Using the United Kingdom as a model for green fiscal reform in this field, the purpose is to demonstrate how similar jurisdictions can achieve the triple benefit of lower emissions, reduced energy costs and move towards energy independence through such reforms. The paper demonstrates progress made and recommends reforms to ensure appropriate incentives are in place to incentivise a wide-scale programme of green fiscal tax reform in the existing homes and new homes industry.

Economic Instruments in NSW Pollution Law: A Case for Greater Use and Refinement

Sarah Wright,
University of Wollongong (Australia)

The first pollution laws introduced in the 1960s-1970s were based on traditional command and control regulation. More flexible and innovative instruments were introduced with reformed pollution laws in the 1990s. The centrepiece of NSW's pollution laws is the Protection of the Environment Operations Act 1997 (NSW) ('POEO Act'). The POEO Act and associated regulations provide the NSW Environment Protection Authority ('EPA') with a number of economic tools to address pollution. This includes instruments such as load-based licensing fees, risk-based licensing fees, tradeable emission schemes, green-offset schemes, and monetary benefit orders. Those instruments have been utilised to variable extents. Some instruments such as monetary benefit orders, which require that a defendant pay back any profit they have derived from an offence, have not been used at all. Fines which are offset by any profits retained by the defendant provide little, if any, deterrence to potential polluters. Other instruments such as tradeable emission schemes have been employed in limited circumstances, namely for specific pollutants and defined geographical areas. Economic regulatory tools have been received with mixed success and criticism. This paper considers the extent to which economic instruments have been utilised in NSW pollution law as a regulatory tool that can aid environmental protection. Particular focus is placed on the use of load-based and risk-based licensing fees, tradeable emission schemes and monetary benefit orders. The paper concludes that while economic instruments have the potential to contribute in an effective way to the EPA's regulation of pollution, some instruments seem to have been all but forgotten and others have a number of potential weaknesses in their design. These factors may be negatively impacting on the EPA's ability to effectively protect the environment.

The Impact of Environmental Tax on the Competitiveness and Behavior of Enterprises

Jian Wu,
Wang Xiao, Renmin University of China (China)

The environmental tax reform is now accelerating in China. Most existing study on environmental tax policies design focused on national and regional level impacts, but it is crucial to understand the impact of different policy design on the enterprises and industries level, since their choice and behavior change makes the fundamental impact. This article uses enterprise relative efficiency as the proxy of enterprise competitiveness, and estimate the potential change of enterprise competitiveness under different policy scenario by using DEA-RAM model. By observing these changes and their directions, we could figure out enterprises' behavior choice under the policy scenarios. Four industries in a city of China, cement, steel, thermoelectricity, and pharmaceutical industry, are involved as our focus of analysis.

This article creates combination of three scenarios on, environmental tax, production and emission, to analyze the impact of environmental tax on enterprises' production and emission behavior. Environmental tax scenarios include current pollution fee policy, emissions tax, and comprehensive environmental tax policy (emissions tax plus carbon tax). Production scenarios consist of three output level: current output, output with 10% decrease and output with 50% decrease. Emission scenarios involve two emission levels: current emission and half emission. This article uses DEA-RAM model to estimate the change of relative efficiency of enterprises. This model allow to involve negative output (e.g. emission), and give more flexibility on the sample size, so it is more applicable to achieve the objectives of this study.

According to the research and analysis, the article presents the following findings: 1) Current pollution fee policy is not inefficient; its bad enforcement weaken the incentive for enterprises to adjust their behaviors; 2) Enterprises with different ownership and scale perform great discrepancy in different industries; state-owned enterprises do not necessarily show better production and environmental performance in responding to the policy change; some small and medium enterprises have better overall competiveness in some industries; 3) Carbon tax show strong incentive to stimulate the production behavior change of enterprise, while for companies with good potential of fuel substitution, emission tax may stimulate more pollutant reduction. With the four findings above, this article provide some recommends for policy reform.

Emissions Trading in China: Return on EU Experience on the Stabilisation of Carbon Prices

Yan Xu,
Chinese University of Hong Kong (Hong Kong)
Anatole Boute, Chinese University of Hong Kong (Belgium)

China, as the biggest emitter of GHG, plays a key role in effectively fostering global efforts to tackle climate change. The success of the Chinese national climate policy in reducing the carbon intensity of its economy is vital to limit global GHG emissions. The effectiveness of China's policy is also critical to secure the participation of other major polluters including the US that has refused to commit to binding international emission reduction targets without Chinese participation. Whether China's climate change policy is effective depends, to an important extent, on the strength of its regulatory framework of internalizing the carbon externality and promoting renewable energy. China has adopted an ambitious renewable energy policy and is implementing pilot Emissions Trading Schemes (ETS) to stimulate the decarburization of energy supply. The EU, often characterized as "leader" in climate policy, has accumulated considerable regulatory experience in this field. The EU ETS experience highlights the regulatory challenges of emissions trading, particularly the challenge, and also, the importance, of providing stable price signals for clean energy investors. Based on the recent regulatory initiatives adopted by the EU Commission and EU member states (primarily the UK), this paper aims to develop recommendations for China to address the challenge from price instability that may occur to undermine the implementation of its ETS. It analyses the issue from a multidisciplinary perspective: whether rights and principles in investment and property laws and legal jurisprudence can help reinforce regulatory pricing stability for low-carbon investors in general and in China in particular.

Implementation of Public Participation in Renewable Energy Projects

Yankun Zhao,
University of New South Wales (Australia)

Both the EU and the UK are parties to the Aarhus Convention, which imposes on governments an obligation to ensure the public are informed and have the opportunity to participate in the decision-making process concerning certain environmental issues.
Given the significant benefits of public participation - the reduction of potential conflicts, benefiting from local knowledge, the enhancement of social learning, and the promotion of sustainable development and democracy - it is suggested this tool be used in renewable energy projects (REPs). Public acceptance and engagement can be expected to help the UK government to meet its target of 15% renewable energy by 2020.

Public participation reflects its different position in the national REPs (a top-down approach to achieve the15% goal) and community REPs (a bottom-up approach). Currently, the public have limited influence on the decision making process in the top-down approach, but have ample opportunities to actively participate in the bottom-up approach.
As renewable energy projects are usually located in local territory, public involvement in the decision making processes is critical. Legally, the Aarhus Convention and EU laws implementing the Convention only provide participation principles; their application into domestic laws allows a wide area of discretion. To date, the UK has failed to produce detailed rules regarding the management of public participation, resulting in uncertainty and, consequently, insufficient participation.

In addition, there are other barriers in practice like inadequate transparency, participation costs, negative attitudes from administrators, a lack of participation culture and participation competence, limited participation time and mistrust. It will be argued that Not in My Backyard (NIMBY) attitudes indeed occur in renewable energy projects, and the underlying reasons for this will be identified in this research. Various measures to deal with NIMBY attitudes will be explored. Different informing methods, multiple rounds of consultation, and financial incentives can be adopted to encourage public participation. For example, granting an exemption from tax liability under the Climate Change Levy and Emissions Trading Scheme is a proven method of encouraging public and business investment in REPs. On the other hand, levying taxation on REPs once they begin to make profits may help to address the NIMBY issue since tax can be regarded as a form of indirect compensation to a local community which both draws public attention to and enhances community acceptance of REPs. These benefits must be balanced against concerns that levying a tax on REPs could lead to a higher price to consumers of electricity from such sources.

Renewable Energy for Climate Change Mitigation -- Law and Policy Development in China

Yuhong Zhao,
The Chinese University of Hong Kong (Hong Kong)

China is under increasing international pressure to abate greenhouse gas (GHG) emissions to tackle climate change. For decades, its economic growth has been powered by carbon-intensive fossil fuels dominated by coal. As for oil and gas, China relies on import, which raises concern of energy security. To increase domestic energy generation and improve its energy mix, China has rightly adopted the national strategy to tap its renewable energy resources.

In early 1990s when China signed UNFCCC, its primary energy consumption was roughly 76.2% by coal, 16.6% by oil, 5.1% by hydropower and 2.1% by natural gas. Although it has no legal obligations to achieve any internationally set carbon abatement targets, it did promulgate the National Programme on Climate Change in 2007 to work on mitigation and adaptation. It released the Medium and Long-Term Plan on the Development of Renewable Energies (2007-2020) supplemented by specialized Plans on Renewable Energy Development during the 11th and 12th FYP periods to further specify targets and tasks. In order to implement the national plans and strategies, achieving the targets for non-fossil fuels to reach 11.4% in 2015, 15% in 2020 and 20% in 2030 of the primary energy mix, the Law on Renewable Energy was enacted and amended to provide regulatory and economic mechanisms to facilitate renewable energy generation, deployment, transmission and consumption.

This paper examines the key mechanisms to promote renewable energies including compulsory purchase requirement imposed on power grid companies, favourable feed-in prices set by the State to support renewable energy generation, subsidies to grid companies to compensate the extra expenses incurred for the deployment and transmission of renewable energies, collection of “renewable energy surcharge” from electricity consumers to fund the subsidies, and a special renewable energy development fund jointly financed by central government through budget allocation and the society through renewable energy surcharge collected. Based on evaluation of these regulatory and economic tools, the paper assesses China's achievement so far in terms of renewable energy growth in investment, installed capacity and electricity generation. Despite the continuing dominance of coal in its energy mix, China’s energy generation is going green and low-carbon and that offers hope of a carbon peak by 2030 to effectively tackle climate change.

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Index of Presenters and Participants

Name	First Name	Company/Organization	Country	Parallel Session	Page No
Gerbeti	Agime	GSE – Gestore Servizi Energetici	Italy	M	65
Giorgi	Silvia	Università di Trento	Italy	A	66
Guglyuvatyy	Evgeny	Southern Cross University	Australia	M	67
Gumley	Wayne	Monash University	Australia	N	67
Gupta	Ajay	Tax Analysts	USA		
Harabut	Chattaporn	University of Western Sydney	Australia		68
Hargroves	Charlie	Sustainability Policy Institute Curtin University	Australia	D	69
Hasan	Dahliana	Universitas Gadjah Mada	Indonesia	O	70
Heagney	Elizabeth	Office of Environment and Heritage	Australia		
Hymel	Mona	University of Arizona	USA	C	71, 72
Jarvie	Deborah	University of Lethbridge	Canada	C	73
Johnston	Vanessa	Monash University	Australia	O	74
Joseph	Sally-Ann	National University of Singapore	Singapore	H, I	75, 76
Kang	Hae Jin	Samoo Architects & Engineers	Korea	H	76
Kettner	Claudia	Austrian Institute of Economic Research (WIFO)	Austria	G, L	77, 78
Kovac	Mladen	Office of Environment & Heritage	Australia		
Kreiser	Larry	Cleveland State University	USA		
Leary	David	University of Technology Sydney	Australia	G	79
Lee	Paul	Cleveland State University	USA	C	97
Lee	Tae-Yeoun	Ryukoku University	Japan	N	79
Li	Xiaoqiong	Chinese Academy for Environmental Planning	China		64
Liu	Mingming	Shandong University of Science and Technology	China	D	57
Llorens	Hugo	Consulate General of the United States of America	Australia		34
Lowe	David	Lowe Wines	Australia		38
Malherbe	Willem	University of Johannesburg	South Africa	J	80
Malley	Virginia	Nature Conservation Trust NSW / Clean Energy Regulator	Australia		
Mann	Roberta	University of Oregon	USA	F	81
Manwaring	Kayleen	University of New South Wales	Australia		
Martin	Fiona	University of New South Wales	Australia		

Name	First Name	Company/Organization	Country	Parallel Session	Page No
Meyer	Eike	GIZ – German International Cooperation	Germany		82
Milne	Janet	Vermont Law School	USA	A	82
Morrison	Kevin	Institute for Sustainable Futures University of Technology Sydney	Australia	J	83
Mortimore	Anna	Griffith University	Australia	E	84
Motoki	Yuko	Mizuho Information & Research Institute	Japan	F	85
Munro	Chloe	Clean Energy Regulator	Australia		32
Naito	Aya	Mizuho Information & Research Institute	Japan	F	85
Palassis	Stathis	University of Technology Sydney	Australia	O	86
Pearce	Prafula	Curtin University	Australia	F	87
Pirlot	Alice	Louvain University	Belgium		88
Poelina	Anne	Madjulla Incorporated	Australia		45
Riley	Sophie	University of Technology Sydney	Australia	B	89
Roberts	Tracey	Hastings College of the Law University of California	USA	G	90
Roy-Chowdhury	Chas	Association of Chartered Certified Accountants ACCA	United Kingdom		43
Rudolph	Sven	Kyoto University	Japan	H	91
Saccasan	Moira	University of Western Sydney	Australia		
Sawada	Eiji	Kyushu Sangyo University	Japan	K	92
Seidel	John	Office of Environment and Heritage	Australia		39
Smillie	Kate	Nature Conservation Trust	Australia		
Soncini	Carlo	University of Parma	Italy	I	94
Sotelo Pérez	María	Complutense University Of Madrid	Spain	J	95
Stoianoff	Natalie	University of Technology Sydney	Australia	B, M	67, 89, 96
Tan	Seck	National University of Singapore	Singapore	M	97
Tran-Nam	Binh	University of New South Wales	Australia		
Truby	Jon	Qatar University	Qatar	E	98
Wells	Gary	Nature Conservation Trust of NSW	Australia		37
Wilder	Martijn	Baker & McKenzie	Australia		36
Wolff	Sébastien	Université Catholique de Louvain	Belgium		88

Name	First Name	Company/Organization	Country	Parallel Session	Page No
Wright	Sarah	University of Wollongong	Australia		98
Wu	Jian	Renmin University of China	China	E	99
Xu	Yan	The Chinese University of Hong Kong	Hong Kong	L	100
Zhao	Yankun	University of New South Wales	Australia		101
Zhao	Yuhong	The Chinese University of Hong Kong	Hong Kong	G	102