

Youngho Chang

Assistant Professor

Division of Economics
Nanyang Technological University
HSS-04-65, 14 Nanyang Drive, Singapore 637332, Singapore

Adjunct Senior Fellow

S. Rajaratnam School of International Studies
Nanyang Technological University

Phone: +65-6513-8107 (Office) Fax: +65-6795-5797
Email: isyhchang@ntu.edu.sg

Education:

Ph.D. in Economics – University of Hawaii at Manoa, U.S.A., May 1999
Field of Concentration: Economics of Natural Resources and the Environment
Dissertation Title: *Economy, Energy, and the Environment: A General Equilibrium Model of Heterogeneous Demand and Extraction in Natural Resources*

Master of Economics with honor of summa cum laude, Graduate School of Business Administration, Yonsei University, South Korea, February 1988
Thesis Title (in Korean): *The Spatial Structure of the University and Growth*

Bachelor in Agricultural Science, Department of Landscape Architecture, Seoul National University, South Korea, August 1983
Thesis Title (in Korean): *Location and Efficient Function of Parking Space in the University*

Professional Experiences:

Assistant Professor, Division of Economics, Nanyang Technological University, Singapore, January 2008 – present.

Senior Fellow (Joint Appointment), Energy Studies Institute, National University of Singapore, Singapore, August 2008 – June 2011.

Assistant Professor (Joint Appointment), S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore, January 2008 – July 2010.

Research Fellow, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore, July 2007 – December 2007.

Assistant Professor, Department of Economics, National University of Singapore, Singapore, July 1999 – June 2007.

Research Assistant for Dr. James A. Nickum, Environmental Governance in Asia, the East-West Center, Honolulu, Hawaii, U.S.A., October 1993 – March 1995.

Financial Analyst, Business Planning and Analysis, American Express International Inc., Seoul, South Korea, October 1985 – April 1989.

Landscape Architect, Han Yang Corp., Seoul, South Korea and Riyadh, Saudi Arabia, June 1983 – March 1985.

Research Interests:

Economics of Global Warming and Climate Change
 Economics of Renewable Resources
 Energy Efficiency and Conservation of Energy
 Competition and Reliability in Electricity Markets
 Economics of Energy Security
 Energy and Economic Growth in China

Teaching Experiences:

Graduate Courses

Economics of the Environment (lecture and tutorials)
 Energy Security (lecture and tutorials)

Undergraduate Courses:

Environment and Urban Studies (course coordinator)
 Energy Economics (lecture and tutorials)
 Integrated Environmental Management (guest lecture for students of Civil and Environmental Engineering)
 Resource and Energy Economics (lecture and tutorials; seminar style)
 Environmental Economics (lecture and tutorials)
 Macroeconomics (tutorials)
 Principles of Economics (tutorials)

Publications:**Books:**

1. *Energy and Non-Traditional Security (NTS) in Asia*, with Mely Caballero-Anthony and Nur Azha Putra (eds.), Springer, 2012.
2. *Rethinking Energy Security in Asia: A Non-Traditional View of Human Security*, with Mely Caballero-Anthony and Nur Azha Putra (eds.), Springer, 2012.
3. *Energy Conservation in East Asia: Towards Greater Energy Security*, with Elspeth Thomson and Jae-Seung Lee (eds.), World Scientific, Singapore, 2010.
4. *Energy Security: Asia-Pacific Perspectives*, with Virendra Gupta, Chong Guan Kwa, Bhupendra Kumar Singh, and Alvin Chew (eds.), Manas Publications, New Delhi, India, 2009.
5. *Feasibility Study on Establishing of Oil Product Spot Market in Northeast Asia*, with Jin Young So (Lead Author), Nam Jin Roh and Hyun Jin An, Korea Energy Economics Institute, December 2007 (in Korean with Executive Summary in English).

Book Chapters:

1. “Energy and the Greater Mekong Sub-region (GMS): Cooperation, competition and development,” with Lixia Yao in *Dealing with Energy Vulnerabilities: Case Studies of Cooperation and Collaboration in East Asia*, edited by Mely Caballero-Anthony and Daojiong Zha, Routledge (2012), pp. .
2. “Rethinking market governance and energy security,” with Collin Koh Swee Lean in *Energy and Non-Traditional Security (NTS) in Asia*, edited by Mely Caballero-Anthony, Youngho Chang and Nur Azha Putra, Springer (2012), pp. 13 – 30.
3. “Energy Security in ASEAN: Policies and Implications, with Lixia Yao in *Energy and Non-Traditional Security (NTS) in Asia*, edited by Mely Caballero-Anthony, Youngho Chang and Nur Azha Putra, Springer (2012), pp. 31 – 46.
4. “The non-traditional security (NTS) perspective on energy security policies in Singapore,” with Nur Azha Putra in *Rethinking Energy Security in Asia: A Non-Traditional View of*

- Human Security*, edited by Mely Caballero-Anthony, Youngho Chang and Nur Azha Putra, Springer (2012), pp. 37 – 58.
5. “Post-Fukushima: Whither Nuclear Energy?” with Rajesh Basrur and Koh Swee Lean Collin in *Nuclear Power and Energy Security*, edited by Rajesh Basrur and Koh Swee Lean Collin, Routledge (2012), 194 – 202.
 6. “An integrated Asian natural gas market: Potentials and policy implications,” with Yanfei Li in *Deepening Understanding and Moving Forward: Energy Market Integration in East Asia*, edited by Fukunari Kimura and Xunpeng Shi, Economic Research Institute for ASEAN and East Asia, Jakarta, Indonesia (2011). pp. 241 – 269.
 7. “East Asian energy supply, demand and cooperation outlook” with Elspeth Thomson in *Energy Conservation in East Asia: Towards Greater Energy Security*, edited by Elspeth Thompson, Youngho Chang and Jae-Seung Lee, World Scientific, Singapore (2010), pp. 1 – 47.
 8. “The potential for energy conservation in East Asia” with Elspeth Thomson in *Energy Conservation in East Asia: Towards Greater Energy Security*, edited by Elspeth Thompson, Youngho Chang and Jae-Seung Lee, World Scientific, Singapore (2010), pp. 49 – 86.
 9. “Cost-benefit analysis of mining in protected forest: A case study of PT Weda Bay Nickel, Central Halmahera, Indonesia,” with Silvia Irawan in *Sustainability Matters: Environmental Management in Asia*, edited by Lin-Heng Lye, George Ofori, Lai Choo Malone-Lee, Victor R. Savage and Yen-Peng Ting, World Scientific, Singapore (2010), pp. 385 – 412.
 10. “A schematic plan for a green energy policy in Singapore,” with Amanda Ong Hwee Pang in *Sustainability Matters: Environmental Management in Asia*, edited by Lin-Heng Lye, George Ofori, Lai Choo Malone-Lee, Victor R. Savage and Yen-Peng Ting, World Scientific, Singapore (2010), pp. 461 – 490.
 11. “The economics of climate change and its impact on policy: Comment,” in the Twelfth Singapore Economic Roundtable December 2009, edited by Manu Bhaskaran and Lee Young Young, National University of Singapore Press, Singapore (2010), pp. 78 – 82.
 12. “Housing policy for low-income households in Singapore,” in *Housing Policy for Lower-Income Household of Advance Countries*, edited by Jeong-Su Jin and Sung-Je Jeon, Korea Research Institute for Human Settlements, Korea (2010), pp. 31 – 60 (in Korean).
 13. “The economics of energy security,” in *Energy Security: Asia-Pacific Perspectives*, edited by Virendra Gupta, Chong Guan Kwa, Bhupendra Kumar Singh, Youngho Chang and Alvin Chew, Manas Publications, New Delhi, India (2009), pp. 35 - 49.
 14. “Global economic crisis and energy security: Integrated energy market,” in *Singapore and Asia*, edited by Sng Hui Ying and Chia Wai Mun, World Scientific, Singapore (2009), pp. 99 – 119.
 15. “Energy and climate change: Towards sustainable development,” with Jiasheng Tan in *Energy and Security Cooperation in Asia: Challenges and Prospects*, edited by Christopher Len and Alvin Chew, Institute for Security and Development Policy, Stockholm-Nacka, Sweden (2009), pp. 239 – 267.
 16. “The problems and prospects of an integrated regional energy market,” in *Collaboration under Anarchy: Functional Regionalism and the Security of East Asia*, RSIS Monograph No. 15, edited by See Seng Tan, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore (2009), pp. 26 – 34.
 17. “Renewable energy and the environment: Technology and economic perspectives,” in *Energy Perspectives on Singapore and the Region*, edited by Mark Hong, Institute of Southeast Asian Studies, Singapore (2007), pp. 58 – 66.
 18. “Overview of energy security in Asia,” in *Energy & Security: The Geopolitics of Energy in the Asia-Pacific*, edited by the Institute of Defence and Strategic Studies (IDSS), Nanyang Technological University, Singapore (2006), 15 – 21.
 19. “Country studies: South Korea,” in *Energy & Security: The Geopolitics of Energy in the Asia-Pacific*, edited by the Institute of Defence and Strategic Studies (IDSS), Nanyang Technological University, Singapore (2006), 45 – 48.

20. “Singapore: National energy security and regional cooperation,” with L. Lye, in *Energy Security: Managing Risk in a Dynamic Legal and Regulatory Environment*, edited by B. Barton, C. Redgwell, A. Ronne and D. Zillman. Oxford: Oxford University Press (2004), pp. 391 – 412.
21. “Equity, efficiency and effectiveness of greenhouse gas emissions reduction paradigms: Agenda for advanced developing economies (focus in Korea),” in *Reinforcing Asia-Europe Cooperation on Climate Change*, edited by Asia-Europe Environment Forum, Asia-Europe Foundation, Singapore (2004), pp. 178 – 192.

Published Papers:

1. “Oil price shocks and trade imbalances,” with Thai Ha Le, *Energy Economics* (forthcoming)
2. “Power Generation and Cross-border Grid Planning for the Integrated ASEAN Electricity Market: A Dynamic Linear Programming Model,” with Yanfei Li, *Energy Strategy Reviews* (forthcoming)
3. “Oil price shocks and gold returns,” with Thai Ha Le, *International Economics*, 131: 71-104 (2012).
4. “Assessment of cogeneration plants for a community energy system: A case study in Korea,” with M. Chung, C. Park, S. Lee, H. Park and Y. Im, *Energy Policy*, 47: 365 – 383 (2012).
5. “Alternative energy for economic growth: Paths towards sustainable development,” *CSPS Strategy and Policy Journal*, 2: 11 – 30 (2011) CSPS Brunei Darussalam.
6. “Energy security and energy in a seamless Asia,” with Lixia Yao, *Panorama: Insights into Asian and European Affairs*, 01/2011, 57 – 71 (2011), Konrad Adenauer Stiftung.
7. “Energy use and division of capital stock in endogenous R&D model,” *Korea and the World Economy*, 11(3): 493-525 (2010).
8. “Biofuel on global economy: Economic, social, and the environmental perspectives,” with Sarah Ho and Patricia Seah, *Northeast Asia Energy Focus*, 7(1), 65-75 (2010).
9. “Energy and economy modelling,” with Benjamin Tang and Wei Mei Hum, *ESI Bulletin on Energy Trends and Development*, 1(4): 2-5 (2009).
10. “The economics of energy security: Definition and drivers,” *Northeast Asia Energy Focus*, 6(1): 29-36 (2009).
11. “Electricity market deregulation and energy security: A study of the UK and Singapore electricity markets,” with Jian Liang Lee, *International Journal of Global Energy Issues* 29(1/2): 109-132 (2008).
12. “Efficiency of generation companies in the deregulated electricity market of Singapore: Parametric and non-parametric approaches,” with Wai Lit Toh, *International Journal of Electronic Business Management*, 5(3): 225-238 (2007).
13. “Differing perspectives of major oil firms on future energy developments: An illustrative framework,” with Jiayun Yong, *Energy Policy* 35(11): 5466-5480 (2007).
14. “Electricity market structure, electricity price and its volatility” with Cheolbeom Park, *Economics Letters*, 95(2): 192-197 (2007).
15. “The new electricity market of Singapore: Regulatory framework, market power and competition,” *Energy Policy*, 35(1): 403-412 (2007).
16. “Efficiency and deregulation of the electricity market in Singapore,” with Tuan Hin Tay, *Energy Policy*, 34(16): 2498-2508 (2006).
17. “Oil price fluctuations and the Singapore economy,” with Joon Fong Wong, *Energy Policy*, 31(11): 1151-1165 (2003).
18. “Economy, energy, and environment: A general-equilibrium model of heterogeneous demand and extraction in natural resources,” *Environmental and Resource Economics Review*, 6: 193-210 (1997).
19. “The asymptotic variance of ML estimator of MA (1) coefficient – Solution,” with Eric Im, *Econometric Theory*, 9(3): 527-530 (1993).
20. “The asymptotic variance of ML estimator of MA (1) coefficient,” with Eric Im, *Econometric Theory*, 8(3): 424-426 (1992).

Submitted Papers:

1. “Midstream and downstream demand influence on crude oil prices,” with Y. Li, B. Tang and Y. Sng to *Energy Economics* (Revise and resubmit).
2. “Oil trade shocks and trade imbalances,” with T. Le to *Energy Economics* (Revise and resubmit).
3. “Oil price shocks and gold returns,” with T. Le to *International Economics* (Revise and resubmit).
4. “Energy consumption, energy R&D and economic growth in OECD economies,” with S. L. Wong and W. M. Chia to *Resource and Energy Economics* (First resubmission).
5. “Oil and gold prices: Correlation or causation?” with T. Le to *Empirical Economics* (First submission).

Book Reviews:

1. *Natural Gas in Asia: The Challenges of Growth in China, India, Japan and Korea* edited by Jonathan Stern (Oxford University Press, Oxford, 2nd edition, 2008), *Energy Journal*, 32(1): 234-238 (2011).
2. *Crude Power: Politics and the Oil Market* by Øystein Noreng (I.B. Tauris, London, 2002), *Energy Policy*, 32: 1036-1038 (2004).

Commentaries and Policy Briefs:

1. “The G-20 and Asia: RSIS-ROK Embassy Joint Workshop Report,” with Dongmin Lee, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore, 27 October 2010.
2. “Powering growth: The non-traditional Security (NTS) perspective on the energy security policies in Singapore,” with Nur Azha Putra, *Asia Security Initiative Policy Series*, Working Paper No. 4, June 2010.
3. “Taxing questions on the carbon challenge,” with Benjamin Tang, *the Straits Times*, Singapore Press Holdings Limited, 03 December 2009.
4. “ASEAN Petroleum Security Agreement: Sealed or leaking?” with Collin Koh, *RSIS Commentaries*, No. 28, 2009, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore.
5. “Gas feuds: Russia and the EU’s energy security,” with Jesmeen Khan, *RSIS Commentaries*, No. 12, 2009, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore.
6. “Energy security: Rethinking market and governance,” with Collin Koh, *NTS Insight*, October 2008, Centre for Non-Traditional Security Studies, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore.
7. “Energy security in Singapore: Opportunities and challenges,” with Nur Azha Putra, *RSIS Commentaries*, No. 101, 2008, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore.
8. “Making power affordable to all,” with Nur Azha Putra, *the Straits Times*, Singapore Press Holdings Limited, 18 September 2008.

Papers in Conference Proceedings:

1. “Commodity speculation and price volatility,” in *Energy Markets Evolution under Global Carbon Constraints: Assessing Kyoto and Looking Forward*, Proceedings of the 35th IAEE International Conference, 24 – 27 June 2012, Perth, Australia.
2. “A path towards strong sustainability,” in *Growing Energy Demand, Energy Security and the Environment in Asia*, Proceedings of the 3rd IAEE Asian Conference, 20 – 22 February 2012, Kyoto, Japan.
3. “Reconciliation of weak and strong sustainability: A path towards sustainable development,” with E. Quah in Proceedings of the 2nd Congress of East Asian Association of Environmental

- and Resource Economics, 02 – 04 February 2012, Padjadjaran University, Bandung, Indonesia.
4. “An integrated Asian natural gas market: Potentials and policy implications,” with Yanfei Li in *Institutions, Efficiency and Evolving Energy Technologies*, Proceedings of the 34th IAEE International Conference, 19 – 23 June 2011, Stockholm, Sweden.
 5. “Endogenous R&D model with energy and division of capital stock,” in *Environmental Fiscal Mechanism for Sustainable Development*, Proceedings of the 1st Congress of East Asian Association of Environmental and Resource Economics, 17 – 19 August 2010, Hokkaido University, Sapporo, Japan.
 6. “A secured energy future for the U.S.A.: Myth or truth,” with Cheryl Lin, Xue Wei Loy and Xuan Ru Soh in *the Future Energy: Global Challenges, Diverse Solutions*, Proceedings of the 33rd IAEE International Conference, 6 – 9 June 2010, Rio de Janeiro, Brazil.
 7. “Biofuel on global economy: Economic, social and environmental perspectives,” with Sarah Ho and Patricia Seah, Proceedings of the 1st Regional Conference on Biotechnology: Focus on Biofuels and Bioenergy, 30 – 31 July 2009, Manila, the Philippines.
 8. “The economics of climate change regimes: A sustainable post-Kyoto framework,” in *Energy, Economy, Environment: The Global View*, Proceedings of the 32nd IAEE International Conference, 21 – 24 June 2009, San Francisco, California, USA.
 9. “Liquefied natural gas terminal and electricity market in Singapore,” with Benjamin Tang in *Unveiling the Future of Energy Frontiers*, Proceedings of the 28th USAEE/IAEE North American Conference, 3 – 5 December 2008, New Orleans, Louisiana, USA.
 10. “Electricity demand and the rebound from generation efficiency gains,” with Benjamin Tang in *Energy Security and Economic Development under Environmental Constraints in the Asia/Pacific Region*, Proceedings of the 2nd IAEE Asian Conference, 5 – 7 November 2008, Perth, Australia.
 11. “Pan-Asian natural gas trade in competitive market frameworks,” with T. Pan, International Energy Workshop 2008, 30 June – 2 July 2008, Paris, France.
 12. “Empirical analysis of price-elastic demand with forward contracting in electricity market,” with Afzal Siddiqui in *Bridging Energy Supply and Demand: Logistics, Competition and Environment*, Proceedings of the 31st Annual IAEE International Conference, 18 – 20 June 2008, Istanbul, Turkey.
 13. “The dynamics of resource use and carbon trading,” with Nerine Teo in *Asian Energy Security and Economic Development in an Era of High Oil Prices*, Proceedings of the 1st IAEE Asian Conference, 5 – 6 November 2007, Taipei, Taiwan.
 14. “R&D, energy policy and sustainable growth,” in *Developing & Delivering Affordable Energy in the 21st Century*, Proceedings of the 27th USAEE/IAEE North American Conference, 16 – 19 September 2007, Houston, Texas, USA.
 15. “Pan-Asian gas trade model in competitive market frameworks,” with T. Pan in *Energy in a World of Changing Costs and Technologies*, Proceedings of the 26th USAEE/IAEE North American Conference, 24 – 27 September 2006, Ann Arbor, Michigan, USA.
 16. “High crude oil prices: A study of midstream and downstream demand influence on prices,” with Y. Sng in *Securing Energy in Insecure Times*, Proceedings of the 29th Annual IAEE International Conference, 7 – 10 June 2006, Potsdam, Germany.
 17. “Pricing behavior, market power and vesting contracts in a deregulated electricity market,” in *Fueling the Future: Prices, Productivity, Policies, and Prophecies*, Proceedings of the 25th USAEE/IAEE North American Conference, 18 – 21 September 2005, Denver, Colorado, USA.
 18. “The new electricity market of Singapore: Regulatory framework, market power and competition,” in *Globalization of Energy: Markets, Technology, and Sustainability*, Proceedings of the 28th Annual IAEE International Conference, 3 – 6 June 2005, Taipei, Republic of China.
 19. “Competition and market efficiency in deregulated electricity markets,” in *ASEAN Economic Cooperation: New Dynamics, New Paradigms*, Proceedings of the 29th Conference of the

- Federation of ASEAN Economic Associations (FAEA), 10 – 11 December 2004, Kuala Lumpur, Malaysia.
20. “Measuring consumption efficiency of the deregulated electricity market in Singapore,” Proceedings of the 9th Convention of the East Asian Economic Association (EAEA), 13 – 14 November 2004, Hong Kong, China.
 21. “Price responsiveness of the deregulated electricity market of Singapore,” with T. Tay in *Energy, Environment and Economics in a New Era*, Proceedings of the 24th USAEE/ IAEE North American Conference, 8 – 10 July 2004, Washington, DC, USA.
 22. “Singapore’s role in sustaining energy security in Asia,” with S. Tsai in *Energy, Environment and Economics in a New Era*, Proceedings of the 24th USAEE/ IAEE North American Conference, 8 – 10 July 2004, Washington, DC, USA.
 23. “Price responsiveness in the new electricity market: A Singapore experience,” with T. Tay, *Proceedings of the IEEE 2nd International Conference on Electric Utility Deregulation, Restructuring and Power Technologies (DRPT 2004)*, 5-8 April 2004, Hong Kong, China.
 24. “Regulatory framework of the Singapore new electricity market,” *Proceedings of the International Conference on Electric Industry in Transition: Issues and Prospects for Asia*, 14-16 January 2004, Asian Institute of Technology, Thailand.
 25. “Efficiency and equity in a deregulated electricity market,” in *New Challenges for Energy Decision Makers*, Proceedings of the 26th International Association for Energy Economics (IAEE) International Conference, 4 – 7 June 2003, Prague, Czech Republic.
 26. “Oil price fluctuations and Chinese economy,” with C. Jiang in *Innovation and Maturity in Energy Markets: Experience and Prospects*, Proceedings of the 25th International Association for Energy Economics (IAEE) International Conference, 26 – 29 June 2002, Aberdeen, Scotland, United Kingdom.
 27. “Price and load volatility in electricity spot market,” with D. Lee in *Innovation and Maturity in Energy Markets: Experience and Prospects*, Proceedings of the 25th International Association for Energy Economics (IAEE) International Conference, 26 – 29 June 2002, Aberdeen, Scotland, United Kingdom.
 28. “Reducing CO₂ emissions: Perspective from two-sector energy model,” with J. Roumasset in *Energy Markets and the New Millennium: Economics, Environment, and Security of Supply*, Proceedings of the 23rd International Association for Energy Economics (IAEE) International Conference, 7 – 10 June 2000, Sydney, Australia.

Reports from Consultancy:

1. “An update on the Singapore MARKAL-MACRO model,” Prepared for the Ministry of Trade and Industry, and the Ministry of the Environment and Water Resources, Singapore, May 2010 (working as an overall team leader with Shaligram Pokharel and Toh Kok Chuan).
2. “Green growth and green jobs: Economic growth, decent work, competitiveness and sustainable development,” Prepared for UNESCAP and ILO, September 2009.
3. “*The economics of the Kyoto Protocol: A cost-benefit analysis for Singapore*,” Prepared for Inter-Agency Task Force on Kyoto Protocol, the Government of Singapore, October 2005 (working as an overall team leader with Ho Hiang Kwee, Leong Kai Choong, Ramli Osman, Toh Kok Chuan, Chen Yuan and Ramachandran Kannan).
4. “*Understanding methanol consumption drivers*,” Prepared for International Methanol Producers and Consumers Association (IMPCA), August 2005 (with Methanol Market Services Asia Private Limited).
5. “*The effectiveness of the new electricity market structure in Singapore*,” Prepared for Temasek Capital Private Limited, Singapore, August 2004.

Invited Talks:

1. “Resource allocation and cost benefit analysis in public policy making and evaluation,” Vietnamese Executive Training Programme, 18 – 30 December 2011, Nanyang Technological University, Singapore, 30 December 2011.
2. “Dynamics between strategic commodities and financial variables,” Department of Economics, National Chung Cheng University, Chiayi, Taiwan, 19 December 2011.
3. “Four dimensions of energy security: A quantitative analytical framework of China's energy policy,” Workshop on Renewable Energy Development and Industrial Competitiveness, The Taiwan Agricultural and Resource Economic Association, National Taipei University, New Taipei City, Taiwan, 17 December 2011.
4. “Energy technology: Is it a solution for climate change?” Operations Management, Nanyang Business School, Nanyang Technological University, Singapore, 21 November 2011.
5. “Oil price fluctuations and macroeconomic performances in Asian and Oceanic economies,” IMBA Program, Chung Yuan Christian University, Chung-Li, Taiwan, 15 November 2011.
6. “Forest conservation and deforestation: The economics of global warming and climate change,” at 2011 Bayer Eco-Camp organized by Bayer (Southeast Asia) Pte. Ltd, 18 June 2011, Singapore.
7. “Carbon emissions policy: Principles, frameworks and policy implications,” at the course on *the Singapore Economy: Challenges and Options*, organized by Division of Economics, Nanyang Technological University, Singapore, Amara Hotel, Singapore, 3 – 4 March 2011.
8. “Energy security,” at the 12th East Asia-Europe Think Tank Dialogue, *From ASEM to G20: Europe and Asia in the International System*, organized by Konrad Adenauer Stiftung (Germany) and Institute for Strategic and Development Studies (the Philippines), SHILLA Hotel, Seoul, Republic of Korea, 13-16 October 2010.
9. “Alternative energy for economic growth,” at the conference on *Alternative Energy and Energy Efficiency: Fuelling Economic Growth and Sustainable Development for Brunei Darussalam* organized by Centre for Strategic and Policy Studies, Brunei Darussalam, 14 – 15 June 2010.
10. “Regional Cooperation for Energy Security in ASEAN and the Implications for Strategic Energy Cooperation in East Asia” at the *International Symposium on Strategic Energy Cooperation among East Asian Four Countries* organized by School of Advanced International and Area Studies, East China Normal University, Shanghai, China, 4 – 5 May 2010.
11. “Regional Cooperation for Energy Security in the ASEAN,” at the *Energy Forum*, Korea University, Seoul, Korea, 31 March 2010.
12. “Biofuel on Global Economy: Economic, Social, and Environmental Perspectives,” at the *Bioenergy Korea Conference 2010 International Symposium*, Gwang-ju, Korea, 18 – 19 March 2010.
13. “Energy, Security and Energy Security: Is Energy Security for National Security?” at the Indonesia Defense University International Seminar “*Indonesia Towards 2025, Geopolitical and Security Challenges: Focusing on Economy and Energy Aspects*,” Jakarta, Indonesia, 17 – 18 March 2010.
14. “Energy Technology: Is It a Solution for Climate Change?,” at the *Workshop on Energy Systems and Economic Modeling*, the Center for Applied Economic Modeling, Chung Yuan Christian University, Taiwan, 23 – 25 February 2010.
15. “The economics of climate change regimes: A sustainable post-Kyoto framework,” at the California Independent System Operator (CAISO), Folsom, California, U.S.A., 25 June 2009
16. “Climate change and economics,” at the National Institute of Meteorological Research, Seoul, Korea, 18 June 2009.
17. “Regional cooperation and energy security in Southeast Asia,” at the Institute for East Asian Studies, Sogang University, Seoul, Korea, 17 June 2009.
18. “Regional cooperation in Southeast Asia to improve energy security,” at IEA/ERIA/EMA Joint Workshop, *World Energy Outlook 2009: Energy Prospects in Southeast Asia*, Singapore, 26-27 March 2009.

19. “Oil, economy and the environment,” 2009 Seminar on Economics and Public Policies (for Junior College students), organized by Ministry of Education (MOE) and Nanyang Technological University (NTU), Lee Kong Chian Lecture Theatre, NTU, 14 March 2009.
20. “Perspectives on power: Global trends and engineering and construction industry,” Guest Speech for AES Global Engineering & Construction Annual Meeting, Beijing, China, 22 September 2008.
21. “Economic impacts of high oil prices,” at the East Asia Summit – the 7th Energy Cooperation Task Force Meeting International Seminar, ‘*Energy Future: Turning Challenges into Opportunity*,’ Seoul, Korea, 27 June 2008.
22. “The economics of oil,” Lecture given at Raffles Middle East Programme (RMEP), Raffles Junior College, Singapore, 12 May 2008.
23. “Towards a sustainable post-Kyoto regime,” at Environment and Climate Change Seminar Series, *Post-Bali UN Climate Change Conference: What lies ahead?* Institute of Southeast Asian Studies (ISEAS), Singapore, 16 January 2008.
24. “Singapore energy demand and the impact of high oil prices,” at the *Forum - A world of high oil prices: The energy policy implications for Singapore*, Institute of Southeast Asian Studies (ISEAS), Singapore, 30 November 2004.
25. “Impact of oil price fluctuations on the Singapore economy,” at *Oil and Gas Investment Conference (OGI) 2004*, 20-21 September 2004, Raffles Convention Centre, Singapore.
26. “Deregulation in the new electricity market of Singapore: Competition and efficiency,” at the *IEEE 2nd International Conference on Electric Utility Deregulation, Restructuring and Power Technologies (DRPT 2004)*, 5-8 April 2004, Hong Kong, China.

Conference Papers and Presentations:

1. “The economics of water pricing regimes,” International Conference and Workshop on the Economics and Policy of Water and the Environment, jointly organized by Nanyang Technological University and Michigan State University, 29 – 30 June 2012, Singapore.
2. “An integrated Asia-Pacific natural gas market: Potential and policy implications,” with Y Li, An Interdisciplinary Workshop on “Energy-Economy Modeling”, Energy Research Institute @ NTU (ERI@N), Nanyang Technological University, Singapore, 13 March 2012.
3. “Power generation and cross-border grid planning for the integrated ASEAN electricity market: A dynamic linear programming model,” with Y. Li, the 1st Meeting of Working Group for Energy Market Integration in the East Asia Summit Region, Economic Research Institute for ASEAN and East Asia (ERIA) Annex Office, Jakarta, Indonesia, 5 February 2012.
4. “Oil and gold prices: Correlation or causation?” Workshop of Topical Contemporary Research on Finance and Economy, Antai College of Economics and Management, Shanghai Jiao Tong University, Shanghai, China, 15 December 2011.
5. “Dynamics between strategic commodities and financial variables,” the First Joint NTU/ZJU Workshop, School of Economics, Zhejiang University, Hangzhou, China, 13 December 2011.
6. “A new path towards sustainable development,” the 3rd NTU-Hanyang Joint Workshop on Economic Theory and Econometrics, Division of Economics, Nanyang Technological University, Singapore, 07 October 2011.
7. “An integrated natural gas market in Asia: Policy evaluation and welfare implications,” at the *Asian Energy Summit* organized by the Independent Power Producers Association in India (IPPAI), Taj Samudra Hotel, Colombo, Sri Lanka, 8 – 9 June 2011.
8. “Low carbon economy and carbon pricing: A bottom-up approach,” with Euston Quah at *Fudan University-NTU Joint Workshop*, 27 May 2011, Fudan University, Shanghai, China.
9. “Energy diversification in Southeast Asia,” at the workshop on *Nuclear Challenges in Southeast Asia: Promoting Cooperation and Consensus*, organized jointly by Center for Contemporary Conflict, Naval Postgraduate School, USA and School of Social & Political Sciences, University of Canterbury, New Zealand with support from Defense Threat

- Reduction Agency (DTRA), USA, Heritage Hotel, Christchurch, New Zealand, 15 – 17 February 2011.
10. “Energy in a seamless Asia,” with Lixia Yao at a *Regional Workshop on Dealing with Energy Vulnerability: Case Studies of Cooperation and Collaboration in East Asia*, organized by Centre for Non-Traditional Security (NTS) Studies, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore, Park Royal on Beach Road, Singapore, 9 – 10 December 2010.
 11. “Energy use and division of capital stock in endogenous R&D model,” at a joint conference of AKES, KDI, KIF, RCIE, SFG and BOK *Korea and the World Economy, IX: New Economic Order after the Global Financial Crisis*, University of Incheon, Korea, 25 – 26 June 2010.
 12. “Health impacts of air pollution in Singapore,” at the *Economy and Environment Program for Southeast Asia (EEPSEA) 33rd Biannual Workshop*, Manila, the Philippines, 24 – 27 May 2010.
 13. “Economic models for sustainable urban development,” at the *GlobalTech Presidents Meeting and Workshop*, Shanghai Jiao Tong University, Shanghai, China, 3 – 4 May 2010.
 14. “Energy in a Seamless Asia,” *ADB-ADB-ISAS Joint Dissemination Seminar for the Book on Infrastructure for a Seamless Asia*, 12 February 2010, NUSS The Graduate Club, Singapore.
 15. “Energy Economics: Fundamentals and Applications – Modeling and Simulation,” *DNV/NTU Project Proposal Workshop*, 11 February 2010, NTU Research Techno Plaza, Nanyang Technological University (NTU), Singapore.
 16. “Energy technology: Is it a solution for climate change?,” *the 2nd Energy Economy Modeling Workshop*, Energy Studies Institute, National University of Singapore, Singapore, 19 – 20 October 2009, Grand Park City Hall Hotel, Singapore.
 17. “Engineering vs economic efficiency,” in Poster Session, *Inaugural Workshop at the launch of Energy Research Institute @ NTU (ERI@N)*, Nanyang Technological University, Singapore, 1 – 4 June 2009.
 18. “Implications of low oil prices: The anticipated energy winners and losers at the end of global recession,” *Energy Security Conference*, organized by Energy Studies Institute, National University of Singapore, Singapore, Orchard Hotel, Singapore, 22 May 2009.
 19. “The economics of climate change regimes – A sustainable post-Kyoto framework,” *NTU – University of Nottingham Workshop*, Nanyang Technological University, Singapore, 16 January 2009.
 20. “Energy security in Singapore,” with Nur Azha Putra, *Regional Workshop on Energy and Non-Traditional Security*, organized by Centre for Non-Traditional Security (NTS) Studies, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore, Copthorne Hotel Waterfront, Singapore, 28 – 29 August 2008.
 21. “Role of markets in governance and energy security,” with Collin Koh, *Regional Workshop on Energy and Non-Traditional Security*, organized by Centre for Non-Traditional Security (NTS) Studies, S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore, Copthorne Hotel Waterfront, Singapore, 28 – 29 August 2008.
 22. “The economics of energy security,” at the *Fourth Meeting of the CSCAP Study Group on Energy Security*, 8 - 9 July 2008, Bandar Seri Begawan, Brunei Darussalam.
 23. “Agenda for a regional integrated energy market in Asia,” at the *Third Meeting of the CSCAP Study Group on Energy Security*, 25 - 26 March 2008, Beijing, China.
 24. “Energy and climate change: The loop that binds the world,” at the *Conference on Climate Change and Security* organized by S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore and the Switzerland Embassy in Singapore, 11 – 12 October 2007, Traders Hotel, Singapore.
 25. “Energy security and climate change: Challenges ahead,” at the *Joint Seminar* of the Deutsche Gesellschaft für Auswärtige Politik e.V. (DGAP), Germany and the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore, 1 – 2 October 2007, Berlin, Germany.

26. “Is an integrated regional energy market a way to ensure energy security?” at the *Second Meeting of the CSCAP Study Group on Energy Security*, 14-15 September 2007, Goa, India.
27. “Energy and climate change: Towards sustainable development,” at the *Conference on Spotlight on Asia’s Energy and Security Development – A Multilateral Response?*, organized by the Institute for Security and Development Policy (ISDP), Sweden and the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University, Singapore, 7 – 8 September 2007, Traders Hotel, Singapore.
28. “The prospects for an integrated regional energy market,” at a *Study Group on Energy Security Meeting* hosted by CSCAP Singapore co-chairing with CSCAP-India, 23-24 April 2007, Traders Hotel, Singapore.
29. “Consumption efficiency and deregulated electricity market,” with Q. Ong, *the 9th USAEE/IAEE/Allied Social Sciences Associations (ASSA) Annual Conference*, Chicago, USA, 5 – 7 January 2007.
30. “Issue linkage and multilateral environmental agreements,” with Ruchika Saluja, *International Workshop on the Legal Issues for Clean Energy and Climate Change*, Tsinghua University, Beijing, China, 21 – 22 October 2006.
31. “Energy and environmental protection: Role of renewable energy,” *International Symposium on Energy Security: China and the World*, organized by China Institute for International Strategic Studies (CISS), Beijing, China, 24 -26 May 2006.
32. “Pricing behavior, market power and vesting contracts in a deregulated electricity market,” *the 8th USAEE/IAEE/Allied Social Sciences Associations (ASSA) Annual Conference*, Boston, USA, 5 – 8 January 2006.
33. “Competition and market efficiency in a deregulated electricity market,” *Workshops at the Allied Social Sciences Associations/Korea-America Economic Association (ASSA/KAEA) Annual Conference*, Philadelphia, USA, 6 – 9 January 2005.
34. “Market power and competition in a deregulated electricity market,” *Joint Workshop between Department of Economics, National University of Singapore and Faculty of Economics, Chulalongkorn University*, Bangkok, Thailand, 3 December 2004.
35. “Equity, efficiency and effectiveness of greenhouse gas emissions reduction paradigms: Agenda for advanced developing economies,” *the Asia-Europe Environment Forum 2nd Roundtable: “Reinforcing Asia-Europe Cooperation on Climate Change,”* 25-26 March 2004, Jeju, South Korea.
36. “Deregulation, competition and efficiency in the National Electricity Market in Singapore (NEMS),” *PPP Conference 2004: Regulation, De-regulation and Re-regulation in Globalizing Asia*, 22-23 March 2004, Singapore.
37. “Price responsiveness in the new electricity market: A Singapore experience,” with T. Tay, *the Korea-America Economic Association (KAEA) Annual Meeting, Allied Social Science Associations (ASSA) Annual Meetings*, 3 - 5 January 2004, San Diego, CA, USA.
38. “Globalization and electricity market reforms in Singapore and Korea: Is wind still blowing?” *Global Challenges and Local Responses*, a workshop organized by Faculty of Arts and Social Sciences, National University of Singapore, 11-12 October 2003, NUS, Singapore.
39. “Efficiency and deregulation of the electricity market in Singapore,” with T. Tay, *International Conference on “Energy Market Reforms: Issues and Problems”* (2nd Asia Energy Conference), 25 – 26 August 2003, Hong Kong Baptist University, Hong Kong, China.
40. “Economic growth and the environmental quality,” with A. Chong, *the 7th PRSCO Summer Institute/The4th IRSA International Conference*, 20-21 June 2002, Bali, Indonesia.
41. “Energy policy in Singapore: Efficiency, equity, and sustainability,” *Joint-Workshop Between the Department of Economics, National University of Singapore and the School of Economics, University of Nottingham*, 12 -13 April 2002, Singapore.
42. “Poverty, energy, and economic growth in Singapore,” with J. Wong, *the 26th Federation of ASEAN Economic Association (FAEA) Annual Conference*, 20-21 December 2001, Bangkok, Thailand.

Assistance in Publications:

1. Shin, Euisoon, Yok-Shiu Lee, and James E. Nickum, “Valuating the economic impacts of urban environmental problems: Asian cities,” *Urban Management Programme Working Paper 13*, the World Bank, 1997 (the initial draft was completed in 1992).
2. Im, Seung-Bin and Kwi-Gon Kim, *A schematic plan on community parks in Seoul: Il-yong and Seo-o-neung* (in Korean), Seoul Metropolitan City, Korea, 1980.

Projects and Research Grants:**Completed:**

1. “*Review of carbon control and pricing regimes for Singapore*,” Research Project, Energy Studies Institute, National University of Singapore, September 2009 – December 2010.
2. “*Efficient, equitable and sustainable energy policy in a small open economy*,” Academic Research Fund, Nanyang Technological University, August 2009 – July 2011.
3. “*Electricity and gas market governance, development and liberalization in ASEAN*,” Research Project, Energy Studies Institute, National University of Singapore, June 2008 – December 2009.
4. “*Energy consumption behavior in Singapore*,” Research Project, Energy Studies Institute, National University of Singapore, June 2008 – October 2009.
5. “*Consultancy for the study on an update on Singapore MARKAL-MACRO model*,” February 2008 – October 2009 (working as an overall team leader with Shaligram Pokharel, Toh Kok Chuan, and Ker Chung Yang).
6. “*Green growth and green jobs: Economic growth, decent work, competitiveness and sustainable development*,” Consultancy, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and International Labour Organization (ILO), August – September 2009.
7. “*Empirical Analysis of the Forward Market Implications of Price-Elastic Demand*,” Small Research Grant, the British Academy, January – December 2007, Co-investigator (Principal Investigator: Afzal Siddiqui, Department of Statistical Science, University College London).
8. “*The economics of the Kyoto Protocol: A cost-benefit analysis for Singapore*,” Consultancy, Inter-Agency Task Force on Kyoto Protocol, May – October 2005 (working as an overall team leader with Ho Hiang Kwee, Leong Kai Choong, Ramli Osman, Toh Kok Chuan, Chen Yuan and Ramachandran Kannan).
9. “*Understanding methanol consumption drivers*,” Consultancy, International Methanol Producers and Consumers Association (IMPCA), March – August 2005 (with Methanol Market Services Asia Private Limited).
10. “*The effectiveness of the new electricity market structure in Singapore*,” Consultancy, Temasek Capital Private Limited, Singapore, 12 June – 12 August 2004.
11. “*Towards Building Integrated Photovoltaic (BiPV) in commercial buildings in Singapore*,” Academic Research Fund Research Grant co-funded with NEA, National University of Singapore (NUS) and National Environment Agency (NEA), July 2006 – December 2007, collaborator (Principal Investigator: Stephen K. Wittkopf, Department of Architecture, NUS).
12. “*Understanding drivers, enablers, and inhibitors of green business strategies*,” Seed Grant of US\$6,000, Association of Pacific Rim Universities (APRU), July 2005 - June 2006, Principal Co-Investigator with Nagesh N. Murthy (University of Oregon, USA) and Ken Ito (University of Tokyo, Japan).
13. “*Technology and climate change*,” Academic Research Fund Research Grant, National University of Singapore, August 2001 – January 2003.
14. “*Reducing CO₂ Emissions: Perspective from two-sector energy model*,” Academic Research Fund Research Grant, National University of Singapore, February 2000 – January 2001.

On-going:

1. “*Large Scale Design-based Nanomaterials and Heterostructures: Aim for Sustainability*,” Co-PI (PI: Qihua Xiong), New Initiative Fund, Nanyang Technological University, March 2011 – February 2013. (Grant Amount: S\$250,000)

2. “*Bridging Research and Pedagogy in Sustainability*,” PI, Seed Money Project Grant, Sustainable Earth Office, Nanyang Technological University, May 2012 – May 2013. (Grant Amount: S\$42,650)

Awards and Scholarship:

1. Visiting Scholar, the Research Institute for Human and Nature (RIHN), Kyoto, Japan, funded by the Japan Society for Promoting Science (JSPS), 10 – 21 May 2010.
2. Degree Fellow with scholarship, the Environment and Policy Institute (EAPI), the East-West Center, Honolulu, Hawaii, U.S.A., June 1989 – September 1993.

Conferences, Courses and Workshops:

1. Program Chair, An Interdisciplinary Workshop on “Energy-Economy Modeling”, Energy Research Institute @ NTU (ERI@N), Nanyang Technological University, Singapore, 13 March 2012.
2. Session Chair, the 3rd IAEE Asian Conference, 20 – 22 February 2012, Kyoto, Japan.
3. Session Chair, the 2nd Congress of East Asian Association of Environmental and Resource Economics, 02 – 04 February 2012, Padjadjaran University, Bandung, Indonesia.
4. Program Chair, the 3rd NTU-Hanyang Joint Workshop on Economic Theory and Econometrics, Division of Economics, Nanyang Technological University, Singapore, 07 October 2011.
5. Session Chair, *Conference on Policy Responses to Climate Change and Energy Security Post-Cancun: Implications for the Asia-Pacific Region’s Energy Security*, Energy Studies Institute, National University of Singapore, Orchard Hotel, 18 March 2011.
6. Discussant, *Workshop on Nuclear Energy and Human Security*, Centre for Non-Traditional Security Studies, RSIS, NTU, Traders Hotel, Singapore, 23 April 2010.
7. Session Chair, *International Conference on Applied Energy 2010 (ICAE2010)*, 21 – 23 April 2010, Furama Riverfront Hotel, Singapore.
8. Discussant for the presentation of “*Policy implications of climate change*” by Bindu Rohani, the 12th Singapore Economic Roundtable, 26 November 2009, Orchard Hotel, Singapore.
9. Program Chair, the 2nd Energy Economy Modeling Workshop, Energy Studies Institute, 19 – 20 October 2009, Gran Park City Hall Hotel, Singapore.
10. Program Chair, 1st Energy Economy Modeling Workshop and Courses, Energy Studies Institute, 10 – 13 November 2008, Orchard Hotel, Singapore.
11. Program Co-Chair, The Regional Workshop on Energy and Non-Traditional Security, Centre for Non-Traditional Studies, S. Rajaratnam School of International Studies, Nanyang Technological University, 28 -29 August 2008, Copthorne Hotel Waterfront.
12. Panelist, The Sentosa Roundtable on Asian Security 2009, hosted by S. Rajaratnam School of International Studies, Nanyang Technological University and Sasakawa Peace Foundation, Japan, Sentosa Resort and Spa, Singapore, 19 – 20 March 2009.
13. Program Co-Chair, Three Meetings for the CSCAP Study Group on Energy Security:
 - a. Goa, India, 14 – 15 September 2007;
 - b. Beijing, China, 25 – 26 March 2008;
 - c. Bandar Seri Begawan, Brunei Darussalam, 8 – 9 July 2008
14. Session Chair, Panel Discussion III: Climate Change and Conflict, the 11th Asia Pacific Programme for Senior Military Officers (APPSMO): Traditional and Non-traditional Security, organized by S. Rajaratnam School of International Studies, 3 – 10 August 2009, Sentosa Resort and Spa, Singapore.
15. Session Chair, Panel I: Addressing the Scientific Issues of Climate Change, Workshop on “Global Climate Change: Building Consilience between Science, Security & Policy,” organized by the Centre of Excellence for National Security (CENS), S. Rajaratnam School of International Studies, 14 July 2008, Traders Hotel, Singapore.

16. Program Committee: *the 31st Annual Conference of the Federation of ASEAN Economic Associations (FAEA)*, 23 – 25 November 2006, Singapore.
17. Concurrent Session Committee, *the 27th USAEE/IAEE North American Conference*, 16 – 19 September 2007, Houston, Texas, USA.
18. Concurrent Session Committee, *the 26th USAEE/IAEE North American Conference*, 24 – 27 September 2006, Ann Arbor, Michigan, USA.
19. Program Committee: *the 25th USAEE/IAEE North American Conference*, 18 – 21 September 2005, Denver, Colorado, USA.
20. Judge: *Best Student Paper Competition for the 25th USAEE/IAEE North American Conference*, 18 – 21 September 2005, Denver, Colorado, USA.
21. Fellow: *the 5th Asia Pacific Rim Universities (APRU) Fellows Program*, Theme: Globalization and Environmental Sustainability, 15 – 29 August 2004, University of California, Santa Barbara, USA and Osaka University, Japan.
22. Fellow: *Salzburg Seminar*, Session 393: Environment, Energy, and Economy in Asia, 14-21 November 2001, Salzburg, Austria.
23. Participant as an observer: *Second FES-SWP North-South Dialogue*, Global Governance Challenges, Fighting Global Warming: A New North-South Rift?, 18-19 February 2002, Berlin, Germany, jointly organized by the Friedrich Ebert Stiftung (Germany) and the Stiftung Wissenschaft und Politik (Germany).
24. Participant as a speaker: *Asia-Europe Environment Forum 2nd Roundtable: “Reinforcing Asia-Europe Cooperation on Climate Change,”* 25-26 March 2004, Jeju, Korea, jointly organized by the Asia-Europe Foundation, the Hanns Seidel Foundation (Germany), the Institute for Global Environmental Strategies (Japan) and the United Nations Environment Programme.
25. Discussant: The 5th United States Association for Energy Economics/International Association for Energy Economics (USAEE/IAEE) Session, Allied Social Science Association (ASSA) Annual Meeting, January 2003, Washington, D.C., U.S.A.
26. Discussant: The 7th International Convention of the East Asian Economic Association (EAEA), Singapore, October 2001.
27. Panelist: “Electricity Markets in the East,” the 2nd International Conference on *Electric Utility Deregulation, Restructuring and Power Technologies (DRPT2004)*, IEEE JC of PES/IAS/PELS/IES, Hong Kong, April 2004.

Current Research:

The Economic Valuations of Climate Change and Energy
 Energy Security in China
 The Economics of Carbon Mitigation in Singapore
 Pricing Behavior and Market Power in a Deregulated Electricity Market
 An Integrated Energy Market in ASEAN+3 Countries
 Pan-Asian Gas Trade Model

Students Advised:

PhD Students

Nanyang Technological University (under supervision)
 Lixia Yao (Energy Security in China)
 Siang Leng Wong (Sustainable Consumption and Green Growth, co-supervision)
 Thai Ha Le (Oil Prices and Stock and Commodity Market)
 Sadhavi Sharma (Politics of Palm Oil, co-supervision)

Master Students

S. Rajaratnam School of International Studies, Nanyang Technological University, Master Thesis
 Pei-Jen Chen (International relations and energy security in China)
 Bei Jiang (Cooperation and competition for energy between China and India)

Lynette Lin (Geopolitics of India-Pakistan-Iran pipeline project)
 Yi Yang (Energy security strategy in China)
 Yovan Rizaldy (Electricity development in Indonesia)

National University of Singapore, Masters in Economics

Chan Jiang (China economy and oil price fluctuations)
 Jie Liang (R&D, Induced Technology Change and Climate Change)
 Ruchika Saluja (The Economics of Environmental Impact)

National University of Singapore, Masters in Environmental Management

Joselito L. Guevarra (Hydrogen Economy in Singapore, co-supervision)
 Rawadee Jarungrattanapong (Environmental Kuznets Curve in Thailand, co-supervision)
 Silvia Iwaran (Cost-Benefit Analysis of Mining in Protected Areas)
 Amanda Ong (Green Energy Policy and Electricity Market)
 Hui Li (The Economics of Land Use and Development in China, co-supervision)

National University of Singapore, Masters in Public Policy Program (external advisor)

Weirong Zhou (Littering and Illegal Dumping)
 John Francisco A. Pontillas (Mangrove Forest Protection)

Undergraduate Students

Nanyang Technological University, Final Year Project (2007 – present)

Xiu Ling Kuan, Chein Ning Yap and Wan Wei Yap (Japan and the Kyoto Protocol)
 Sarah Ho Shu Ching and Patricia Seah Kai Ling (Biofuel)
 Jinqi Chen, Yongxiang Hwang and Jin Yin Liew (Economics of gasoline prices in Singapore)
 Cheryl Lim, Xue Wei Roy and Xuan Ru Soh (Energy Security in the USA)
 Elaine Lee and Lorraine Tan (Environmental Kuznets Curve in Singapore)
 Soo Wei Tan, Siti Raudah bte Hamzah and Tran Dang Tuan Anh (Energy Consumption and Economic Growth in ASEAN countries)
 Kamika Jha, Katrina Marian Fernandez and Noor Fatein binte Jam'an (Oil and Economy)
 Ronald Yeo Wei Shen, San Chin Ng and Teng Siang Lim (Nuclear Energy in Singapore)
 Chua Zhen Chuan, Eu Qiu Xia and Shaun Wong Wei Xiang (Speculation and Commodity)
 Siang Han Chew, Wing Sing Lim and Yong Xi Tan (Economics of Energy Subsidy)

National University of Singapore, Honours Students (1999 – 2007)

Raymond Tan (The Economics of Quasi-Public Good)
 Adrian Chong (Economic Growth and the Environmental Quality)
 Joo Hian Lew (Market Incentives for Environmental Regulation)
 Lydia Lim (Desalination of Water in Singapore)
 Sho Siam Poh (Demand Management of Water in Singapore)
 Joon Fong Wong (Oil Price Fluctuations and Singapore Economy)
 Alvin Chew (Energy, Efficiency and Growth)
 Desmond Lee (Price and Load Volatility in Electricity Market)
 Chin Loo Oh (Economic Growth and Sustainable Development)
 Esther Chia (Government, Electricity Market and Energy Efficiency)
 Charlene Low (Energy Demand in the Internet Economy)
 Tuan Hin Tay (Electricity Market Deregulation)
 Mishelle Lim Jie Hui (Contingent Valuation of Cultural Heritage)
 Li Yang Lew (Alternative Fuel Vehicles)
 Sein Ling Loh (Education Technology and Student Achievement)
 Joycelyn Chua (ASEAN Gas Trade)
 Linda Tan Hui Min (Transition in Resource Use)
 Andrew Wong Zhin-Hua (Energy Consumption and Gross Domestic Product)
 Mohamed Manash (Residential Energy Demand in Singapore)

Wai Mun Kock (Oil Price Fluctuations and Exchange Rate)
 Sui Tin Koh (Cost of Using Renewable Energy)
 Leslie Lie (Oil Price Fluctuations and the Singapore Economy)
 Qihua Shen (Pricing Behavior and Market Power in a Deregulated Electricity Market)
 Tian Hwee Soh (Oil in Singapore)
 Jian Liang Lee (Deregulation and Energy Security)
 Leonard Lim Zhuen (The Economics of Renewables Portfolio Standard)
 Qiyang Ong (Consumption Efficiency and Deregulated Electricity Market)
 Terence Pan Hanli (Pan-Asian Gas Trade Model)
 Yeow Hua Sng (Oil Price Discovery)
 Soo Jie Sheng Tan (Weak and Strong Sustainability)
 Rena Tan Yuying (Development Path in Singapore and Texas)
 Benjamin Tang Haisheng (Oil Prices and China Economy)
 Jessalyn Wong Kah Khei (Oil and the Singapore Economy)
 Zhi Qing Yap (Economics of Oil Subsidy)
 Jiayun Yong (The Economics of Oil Firm's Perspectives on Energy)
 Irene Aw Meiqin (The Economic Model of a Gifted Player)
 Bernadine Lee Shujuan (The Environmental Kuznets Curve and Greenhouse Gases)
 Nerine Teo Siwei (The Economic Dynamics of Carbon Emissions and Credits)

University Service:

1. Member, Working Committee, Energy Research Institute @ NTU (ERI@N), August 2008 – present.
2. NRP (Nanyang Research Programme) Coordinator for School of Humanities and Social Sciences (HSS), Nanyang Technological University, January 2009 – present.
3. URECA (Undergraduate Research Experience on Campus) Coordinator for School of Humanities and Social Sciences (HSS), Nanyang Technological University, January 2008 – present.
4. Co-coordinator, Environment and Sustainability Research Cluster, School of Humanities and Social Sciences, Nanyang Technological University, Singapore, since January 2012 – present
5. Student Academic Integrity Officer, School of Humanities and Social Sciences, Nanyang Technological University, Singapore, March 2012 – present

Consultancy:

1. Consultancy for ILO and UNESCAP on writing a background paper on sustainable growth and competitiveness for the joint ESCAP and ILO's panel discussion session under the International Conference on Green Industry in Asia, August – September 2009 (Report title: *Green growth and green jobs: Economic growth, decent work, competitiveness and sustainable development*).
2. Consultancy for the study on an update on Singapore MARKAL-MACRO model funded by the Ministry of Trade and Industry and the Ministry of the Environment and Water Resources, Singapore, Feb 2008 – October 2009 (working as an overall team leader with Shaligram Pokharel and Toh Kok Chuan) (Report title: *An update on the Singapore MARKAL-MACRO model*).
3. Consultancy for Inter-Agency Task Force on Kyoto Protocol, May 2005 - October 2005 (working as an overall team leader with Ho Hiang Kwee, Leong Kai Choong, Ramli Osman, Toh Kok Chuan, Chen Yuan and Ramachandran Kannan) (Report title: *The economics of the Kyoto Protocol: A cost-benefit analysis for Singapore*).
4. Consultancy for International Methanol Producers and Consumers Association (IMPCA), March 2005 - August 2005 (with Methanol Market Services Asia Private Limited.) (Report title: *Understanding methanol consumption drivers*).

5. Consultancy for Temasek Capital Private Limited, Singapore through NUS Consulting, 25 June 2004 – 12 August 2004 (Report title: *The effectiveness of the new electricity market structure in Singapore*).

Professional and Community Service:

1. Member, Technical Committee for Clean Development Mechanism (CDM) Designated National Authority (DNA), National Environment Agency, Singapore, since July 2010
2. Member, Program Committee, the 3rd IAEE Asian Conference, Kyoto, Japan, 20 – 22 February 2012.
3. Member, Local Committee, International Conference on Applied Energy 2010 (ICAE 2010), *Energy Solutions for a Sustainable World*, Furama Riverfront Hotel, Singapore, 21 – 23 April 2010.
4. Observer, Non-governmental Organization, the Conference of Parties (COP) 15, UNFCCC, Copenhagen, Denmark, 7 – 18 December 2009.
5. Panelist and Delegate, the 31st Meeting of Intergovernmental Panel on Climate Change (IPCC), Bali, Indonesia, 25 – 29 October 2009.
6. Panelist and Delegate, the 30th Meeting of Intergovernmental Panel on Climate Change (IPCC), Antalya, Turkey, 21 – 23 April 2009.
7. External Evaluator, Project Proposals for NOMA (Norad's Programme for Master Studies) Programme, Norwegian Centre for International Cooperation in Higher Education, July 2009.
8. Member, Nomination Committee, International Association for Energy Economics (IAEE), 2008 and 2009.
9. Referee for: *Energy Journal*, *Energy Economics*, *Ecological Economics*, *Energy Policy*, *Singapore Economic Review*, *ASEAN Economic Bulletin*, *Applied Energy*, *International Journal of Global Energy Issues*
10. Speaker for *Economics Executive Programme* (EEP), Department of Economics, National University of Singapore, 2002 – 2005.
11. Council Member, the Economic Society of Singapore (ESS), April 2007 – May 2008.
12. Honorary Treasurer, the Economic Society of Singapore (ESS), March 2002 – March 2007.
13. Member, R&D Workgroup and Households Sub-Committee, the National Climate Change Committee (N3C), Singapore, September 2002 – June 2010.
14. External Instructor, Singapore Environment Institute (SEI), Ministry of Environment and Water Resources, Singapore, September 2008 – January 2010.