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RESEARCHERS AT SINGAPORE'S *INSTITUTE OF SOUTHEAST ASIAN STUDIES* SHARE THEIR UNDERSTANDING OF CURRENT EVENTS

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APEC's Model of Green Growth is a Move Forward[1]

By Lee Poh Onn

Indonesia assumes the chairmanship of the Asia Pacific Economic Communities (APEC) in 2013, adopting the theme of "Resilient Asia-Pacific: The Engine of Global Growth" in the process. Its three proposed priorities – pressing forward on the Bogor Goals, promoting sustainable growth with equity, and improving connectivity – clearly embrace some ongoing long-term goals propounded by the organisation, such as capital market development, food security, and cutting supply chain costs.

The APEC model of green growth fits into the second priority. This model originates from APEC 2010 Japan year, when sustainable growth was given due recognition as one of the five growth attributes[2] important for member economies to develop.[3] The organization also realised that it should help establish low-carbon societies, for which some measures for green growth were proposed. Subsequently in 2011 and 2012, the US and Russia continued where Japan had left off, further adding 'meat' to the model.

GREEN GROWTH AND ECONOMIC DEVELOPMENT

It must be made clear, however, that green growth and sustainable development are two different concepts. Sustainable development, though quickly embraced by governments around the world, did not have a measureable definition or a clear working agenda. Green growth, on the other hand, is showing more promise, providing benchmarks that can easily be measured. It is seen as an "operational strategy of economic system change, where investments in ecological resources and services can also act as a driver of economic

development.[4] Understandably the investing in green activities would necessitate some restructuring of the economy, and create new investment and employment opportunities.

The concept of green growth was officially deliberated in 2005 during a ministerial conference (UNESCAP) on the environment and development in Asia and the Pacific.[5] It was then concluded that economic growth must be understood in the context of environmental sustainability and protection.

Korea, an APEC member economy, was among the first to enshrine green growth in its national development strategy. As part of its Five-Year Plan implemented in 2009, it committed 2% of its GDP through to 2013 to creating a knowledge and technological foundation conducive to green growth. These included:

- Developing the world's first nationwide "smart grid" system by 2030.
- Increasing the country's renewable energy to 11% of energy use by 2030.
- Reducing its greenhouse gas emissions by 30% by 2020.
- Building one million green homes by 2020.

Other international organizations have also recognized the importance of green growth and have incorporated it into their deliberations on economic development. For the World Bank, green growth reconciles a country's need for rapid growth and poverty alleviation with the need to "avoid irreversible and costly environmental damage".[6]

THE APEC MODEL OF GREEN GROWTH

To be sure, sustainable development and environmental concerns already appeared in APEC's agenda in 1993, a year after the Rio Declaration. And in 2007, the environment came to the forefront during the Sydney APEC Leaders' Declaration on Climate Change, Energy Security and Clean Development. Although the concept of green growth was not articulated then, the APEC-wide regional goal of reducing energy intensity by at least 25 percent by 2030 from the 2005 level, and of increasing forest cover by 200,000 square kilometres by 2020, surfaced in several discussions.

The green growth initiative assumes importance from the fact that increases in production (agricultural and industrial) as well as rising levels of consumption exert great pressure on the environment. Hence, there is a need for an environmentally sustainable form of economic growth, which will enable economies to transit into a "clean energy" (low-carbon) future. An improvement in energy efficiency, in turn, also offers cost-effective opportunities to achieve energy security and to mitigate greenhouse gas emissions.

The key deliverables in the APEC model of green growth are as follows: an improvement in energy efficiency; a reduction in tariff barriers for environmental goods and services; and the promotion of the low-carbon sector in member economies. This centres on meeting energy demands (adopting green technologies to improve energy efficiency and

reduce greenhouse gas emissions) while minimizing negative environmental consequences associated with industrialization, and also reducing environmental trade barriers.

Various declarations made since APEC Japan 2010 suggest this.

The Fukui Declaration

The Fukui Declaration on Low Carbon Paths to Energy Security from 19 June 2010 highlighted the achieving energy security through a low carbon path. It also argued for deriving energy from a "cleaner" supply, and also of improving energy efficiency as one of the "quickest, greenest and most cost-effective ways to address energy security, economic growth and climate change challenges at the same time."[7]

APEC Japan 2010

APEC Japan 2010 also acknowledged that although "collective recognition" to protect the environment and natural resources had increased, the world was nevertheless going to have to face heightened challenges, including tackling climate change. Perhaps arising from the awareness that the Kyoto Protocol was approaching the end of its shelf life in December 2012, leaders saw the need for continued management of greenhouse gas emissions.

They also stressed that the creation of green industries and jobs should be reliant on market-based mechanisms.[8] The following measures for green growth were proposed:[9]

First, energy security has to be enhanced; and energy-efficient and low-carbon policies have to be promoted through the sharing of best practices, the conducting of voluntary peer reviews, and the rationalizing and phasing out of inefficient fossil fuel subsidies. The requirements of those in need of essential energy services should nevertheless still be catered for. APEC must also assess the potential for reducing energy intensity beyond the 25 percent goal already agreed to by APEC in 2007.

Second, APEC should develop a low-carbon energy sector by encouraging economies to introduce low-emission power sources, and to assess renewable energy options, nuclear power plants, advanced clean coal technologies, and carbon capture and storage (CCS) to reduce carbon emissions.

Third, access to environmental goods and services (EGS) should be improved and the EGS sectors developed by addressing non-tariff barriers to environmental goods, implementing the APEC EGS Work Program, exploring greater alignment of energy efficiency standards, promoting trade and investment in EGS and facilitating the diffusion of climate friendly and other EGS technologies.

Fourth, APEC must also promote green jobs and training by identifying relevant skills and competencies, sharing best practices, supporting education for sustainable development, and expanding ecotourism.

Fifth, APEC should also promote private investment in green industries and production processes including through market-based financing.

Lastly APEC should promote conservation and more sustainable management of agriculture and natural resources (forest management, soil conservation, marine resources conservation, watershed management, and sustainable agriculture).

APEC USA 2011

In 2011, green growth was re-emphasized at the summit.[10] APEC came up with concrete decisions to rationalize and phase out inefficient fossil-fuel subsidies, importantly, to reduce member countries' aggregate energy intensity by 45 percent by 2035, using 2005 as a base year. Leaders also declared that they would take steps to promote energy efficiency related to transportation, building construction, power grids, jobs, knowledge sharing and education.

APEC Russia 2012

Likewise in 2012, APEC ministers reaffirmed their commitment to promote green growth and to seek practical, trade-enhancing solutions to address global environmental challenges. Member economies committed themselves to reduce applied tariff rates to five percent or less on environmental goods by the end of 2015. A list of 54 items falling under five categories were created under Annex C of the Leaders' Meeting on September 8-9 in 2012.[11] This included renewable and clean-energy technologies, waste-water treatment technologies, air pollution control technologies, solid and hazardous waste treatment technologies, and environmental monitoring and assessment equipment.[12]

ENERGY AND GREEN GROWTH: AN APEC PROFILE

The singling of energy efficiency is significant because energy efficiency would cut demand for fossil fuels, and hence reduce emissions. The development of smart electricity grids (capable of delivering new and renewable sources like solar and wind power) would also enable sources of clean power to be seamlessly connected to existing structures, again enhancing green growth.

Significantly, APEC economies account for 40 percent of the world's population and more than half (60.8 percent) of the world's gross domestic product in 2010 (constant 2000 in US$).[13] The average growth rate in APEC from 1990 to 2010 was 2.8 percent per annum.[14]

Energy efficiency within APEC, apart from Southeast Asian economies, has been improving over time. Table 1 is an energy profile of APEC as a whole, covering various aspects of energy including supply, consumption, and generation. These figures help to identify APEC's potential to diversify to greener technologies, and to improve on energy efficiency. Notably, it is the industrial, transportation and residential/household sectors that have been consuming the most power. As such, any future green growth proposals recommended by APEC member economies should concentrate on these sectors.

Table 1: APEC Energy Profile

Share of Total Primary Energy Supply/World Supply	APEC's share was 52.8 % (4,635 Mtoe[15]) in 1990. This increased to 56.2 % (7.145 Mtoe) in 2010. Between 1990 to 2010: • Total primary energy supply had an average growth rate of 2.2 % per annum. • Coal supply rose by 3.5 % per annum to reach 2,687 Mtoe. • Oil supply rose by 1.0 % per annum to reach 2,150 Mtoe. • Gas supply increased by 2.0 % per annum to reach 1,483 Mtoe. • Supply of nuclear energy grew at 2.1 % per annum to reach 433 Mtoe. • Hydro and Other Renewable Energy grew by 2.4 % per annum to reach 389 Mtoe.
Primary Energy Mix	Between 1990 to 2010: • Share of coal grew from 29.3 % to 37.6 % • Share of oil grew from 37.8 % to 30.1 %. • Share of nuclear energy remained the same at 6.1 %.
Energy Intensity	284.1 toe/mill USD in 2010,[16] a 0.6 % decrease per annum from 1990. From 1990 to 2010, energy intensity increased in Southeast Asia from 406.2 to 469.2 toe/mill USD (0.7 % per annum from 1990) but has decreased in the other regions.[17]
Total Final Energy Consumption	In 2010, the total final energy consumption was 4,562 Mtoe, and the growth rate was 1.7 % per annum, from 3,206 Mtoe in 1990. Consumption for final energy in 2010 in the industrial sector was the largest at 37.1 % of total final consumption. Transportation consumed about 26.8 % while the residential/commercial sector consumed 24.8 %.
Final Consumption of Energy Per Capita	Total consumption per capita was 1.66 toe. In Southeast Asia, final energy consumption per capita was 0.56 per capita, the lowest in APEC. The per capita consumption in Oceania was 2.67 toe, and 4.85 toe in North America. The difference in energy consumption between developed and developing member economies in a way mirrors the divide in energy consumption between countries.

Power Generation	**APEC as a whole:** • 71.2% of power was generated from thermal generation (coal, oil and natural gas).[18] • 13.5% by hydro. • 12.3% by nuclear energy in 2010. • In the East Asia and Russian region: • The share of thermal power was 74.1%, nuclear energy 10.1%. **In Southeast Asia:** • More than 80% of electricity was generated from thermal sources. **In Latin America:** • The share of hydro of 21.5% was higher than the APEC average of 13.5% in 2010.

Source: Asia-Pacific Economic Communities (APEC). APEC Energy Statistics 2010. Energy Working Group, October 2012. APEC Secretariat, 2012, Chapter 2.

CHALLENGES AND WAY FORWARD

In 2010, as part of its 'Green Growth' initiative, APEC launched its first low-carbon model town. This is Yujiapu, about 40 km east of Tianjin, China.[19] In November 2012, Da Nang in Viet Nam was selected as the next site for the Low Carbon Model Town Project. APEC hopes to develop up to 20 low-carbon model cities, using energy-efficient technologies, including smart grids and renewable power generation.[20]

There is fear, however, that deliberations on green growth may move in the direction of sustainable development where implementation gets hindered by a "diffused and fragmented framework, overlapping with duplicating activities, and ad hoc and inconsistent execution …"[21]. This may happen if APEC member economies do not maintain a tight focus on this concept.

It is important that APEC starts things right by working out a clear framework of reference and deciding on viable benchmarks for each member economy to follow. The more developed APEC member economies should also offer financial and non-financial support (technological expertise) to developing economies in their pursuit of green growth, where necessary.

APEC has often been criticized as a "talk shop" where its recommendations, directives, and policies are non-binding and voluntary. There are also no enforcement mechanisms in place. While this lack of a legally binding structure has weakened APEC's ability to carry out reforms, in another sense, it has provided strength from its inclusiveness, and this has helped to cultivate a spirit of cooperation among member countries.

The present structure also provides a regular channel of knowledge sharing under its cooperative platform. This can substantially enhance technical and institutional capacity in areas such as Monitoring, Reporting, and Verification (MRV) of future green growth regulations/benchmarks that APEC plans to implement (either through member economy plans or other plans).

Peer reviews in the APEC process are also an important tool in helping countries undertake policy reforms. Economies that volunteer for a peer review of their energy efficiency efforts allow for a team of experts to analyze in detail their policies and to provide objective feedback and constructive criticisms. Best practices can be identified and shared.[22]

One important aspect of green growth that APEC member economies may like to pursue is the reduction of greenhouse gas emissions.[23] If they can work out some target through individual member economy plans, this would be another feather in APEC's cap. Presently, APEC economies are among the largest greenhouse gas emitters. The USA, though having slipped from being the worst culprit to being the second worst, is still responsible for the greatest volume of accumulated emission.[24]

Seventeen out of APEC's twenty-one member economies are in the list of the top 50 contributors to global CO2 emissions, and they contributed nearly 60 percent of total world emissions in 2010. China is now the largest emitter followed by the United States, the Russian Federation (fourth in the rank of the top 50 economies), and Japan (fifth in rank). China and the United States alone contribute 43.6 percent of total world emissions.[25] Both countries are not obligated to reduce greenhouse gas emissions either. The United States was not a signatory of the Kyoto Protocol or the interim successor to that agreement. China, a signatory of the present climate pact, is not required to make emission cuts. Potentially, the APEC way may ultimately prove to be an effective approach to control greenhouse gas emissions, given how internationally binding talks have so far failed (for example, the Doha Development Agenda), and given the uncertainty of current climate change talks.

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Endnotes

1 I would like to thank Sanchita Basu Das for comments and suggestions on an earlier version of this write-up. Any remaining errors here are solely mine.

2 The other attributes are balanced growth, inclusive growth, innovative growth and secure growth.

3 "The APEC Leaders' Growth Strategy, APEC Japan 2010, 14 November 2010, p. 5

4 I-Chun Hsiao, "An Analysis of APEC's Green Growth Strategy in the Context of the United Nations Conference on Sustainable Development", APEC Study Centre Consortium Conference 2011. Key Findings and Policy Recommendations: Green Growth, Trade Integration and Regulatory Convergence. Coedited by K Aggarwal and Richard Feinberg, APEC Study Centres Consortium (ASCC) 2011 Co Chairs, November 2011, p. 3.

5 Ministerial Conference on Environment and Development in Asia and the Pacific, 2005 Seoul, 28 – 29 March 2005. Economic and Social Commission for Asia and the Pacific, UNESCAP, E/ESCAP/MCED(05)/Rep., 20 April 2005.

6 World Bank. Inclusive Green Growth: The Pathway to Sustainable Development. Washington, D.C.: International Bank for Reconstruction and Development, 2012, pp. 1-2.Ibid.

7 Fukui Declaration on Low Carbon Paths to Energy Security: Cooperative Energy Solutions for a Sustainable APEC. APEC Japan 2010. Ninth Meeting of APEC Energy Ministers, Fukui, Japan, 19 June 2010, p. 1.

8 "The APEC Leaders' Growth Strategy, APEC Japan 2010, 14 November 2010, p. 5.

9 Ibid., p. 6.

10 2011 Leaders' Declaration, The Honolulu Declaration - Toward a Seamless Regional Economy, The 19th APEC Economic Leaders' Meeting, http://www.apec.org/Meeting-Papers/Leaders-Declarations/2011/2011_aelm.aspx. Retrieved on 20 January 2013.

11 20th APEC Economic Leaders' Meeting, Integrate to Grow, Innovate to Prosper", Vladivostok, Russia, September 8-9, 2012. http://www.apec.org/Meeting-Papers/Leaders-Declarations/2012/2012_aelm.aspx. Retrieved on 10 January 2013.

12 It is planned that tariff rates on such products would decrease to five percent or less by the end of 2015. Although non-binding, APEC country officials have openly stressed that the list is key towards meeting APEC's green growth goals. See Thanut Tritasavit, On the APEC List of Environmental Goods, ISEAS Perspective, 8 October 2012.

13 This section draws from APEC. APEC Energy Statistics 2010. Energy Working Group, October 2012. APEC Secretariat, 2012, Chapter 2.

14 Ibid., p. 10.

15 Million tons of oil equivalent.

16 Energy intensity = Total Primary Energy Supply/GDP in constant 2000 USD.

17 A decrease in energy intensity means that less energy is required to produce the same amount of GDP.

18 See APEC. APEC Energy Statistics. Op. cit., p. 15.

19 APEC Launches Test-Case for Low Carbon Model Town, Features, 28 January 2011. http://www.apec.org/Press/Features/2011/0128_lowcarbon.aspx. Retrieved on 10 January 2013.

20 APEC Committee Chooses Da Nang as Next Low-Carbon Town, CleanBiz.Asia, http://www.cleanbiz.asia/news/apec-committee-chooses-da-nang-next-low-carbon-town#.UP-lll6yPdk. Retrieved on 13 January 2013.

21 Hsiao, op. cit., p. 6.

22 Asia-Pacific Economic Cooperation (APEC). APEC Promotes Green Growth to Meet Region's Challenges. 3 January 2012. http://m.apec.org/Press/Features/2012/0103_greengrowth.aspx. Retrieved on 12 January 2013.

23 World Bank. Climate Change and Economic Policies in APEC Economies : Synthesis Report. The World Bank, 2011. https://openknowledge.worldbank.org/handle/10986/2948. Retrieved on 15 January 2013.

24 Ibid.

25 OECD. Southeast Asian Economic Outlook 2011/12. OECD Publishing, 2011.