

## Executive Summary

### Examining the Investment Landscape in Sustainable Energy within APEC

This report offers a detailed analysis of the investment landscape for sustainable energy as a sector of the broader environmental goods and services (EGS) landscape across APEC. Its objective was to identify key inhibitors and facilitators to investment flows so as to provide policy makers with critical information for improving the APEC policy framework for sustainable energy. Simply put, getting this right is critical for all APEC economies. It is not dramatic to say our future depends on it.

This report presents disappointing findings. Despite conducive policy initiatives in all APEC economies progress toward a sustainable energy future is at best flat. Current levels of investments in sustainable energy are insufficient to meet increasing energy demands. Unfortunately, many economies have been drawn back to non-sustainable fossil fuel energy sources. While the challenge for APEC economies is clear, solutions are not.

The APEC Business community is anxious and ready to fully engage. It wants progress. Now. But confusion over competing objectives for energy security and energy affordability deflect focus from sustainable energy and climate change concerns. Policy initiatives are supply-side biased. Policies push sustainable energy into the energy mix, rather than stimulating demand to pull sustainable energy into the market. Business lack clear price signals to inform investment decisions. Regulatory uncertainty discourages investments with long return horizons. Inertia in the form of myopia, misperception, and dulled motivation, at the economy, firm, and consumer levels creates resistance to change, and constrains solution-seeking to incremental improvements of known technologies rather than disruptive breakthrough innovations needed.

There is no appropriate single set of common sustainable energy solutions for all APEC economies. The unique natural energy endowments, stages of economic development, industrial and scientific capabilities, and energy needs of APEC economies require different approaches. Lamentably, this has led to “go it alone” approaches. The consequences for APEC are dire. Climate change and a sustainable energy future are collective action problems. Markets need to be enlarged, standards coordinated, ideas and best practices shared, innovative challenges engaged, trade facilitated, carbon priced and traded, trust enhanced so that economies can become interdependent for energy security, and competition stimulated to ensure viable technologies quickly emerge. Economies cannot do this themselves. Business wants and needs an APEC framework for sustainable energy that encourages coordinated action and sets the terms by which everyone operates, while simultaneously allowing and encouraging the innovation and entrepreneurship so desperately needed to secure a sustainable energy future.

Our research included the following:

- In depth interviews with 180 APEC business executives, private equity investors, government officials, and thought leaders. We specifically sought input from individuals directly involved in actual investment decisions in sustainable energy
- A targeted analysis of 5 lead developing (Chile, China, Peru, Thailand, the Philippines) and 9 developed economies (Australia, Canada, Chinese Taipei, Hong Kong, Japan, Korea, New Zealand, Singapore, United States) for purpose of identifying transferable best practices and pathfinder approaches
- A comprehensive line-by-line analysis of EGS and potential EGS-related provisions in 44 Free Trade Agreements;
- An analysis and synthesis of energy studies, supplemented with interview results, resulting in a catalog of each individual APEC economy’s energy policies and practices.

#### Key Findings

1. **Disappointingly little progress has been made within the APEC region in moving toward a sustainable energy future.** With few exceptions, investments in sustainable energy across APEC economies has remained flat. Despite aspirational goals virtually all APEC economies are becoming more dependent on fossil fuel energy sources. Between 2007-2008, investments in sustainable energy increased 7 percent; growth in fossil fuel increased 63 percent.
2. **Despite readily available financial resources earmarked for investment in sustainable energy, conducive policy incentives, and a healthy stream of new, innovative ideas, relatively little investment in sustainable energy projects is being made.** \$14 trillion is the required capital needed to meet APEC’s energy demand by 2030. Only \$4 trillion has been invested. Every year of delay costs \$500 billion.
3. **Businesses report a reluctance to invest in sustainable energy in the current investment environment because of low expectations for reasonable returns on investment.** Executives cite an absence of transparent energy prices, regulatory uncertainty, small potential market sizes with limited opportunities to achieve scale, high capital costs and long payback periods as the main reasons for not investing in sustainable energy projects.
4. **Energy affordability and energy security concerns trump environmental and inclusive growth concerns.** APEC economies are focused on ensuring adequate supplies of cheap energy, now, and for the near future. In most economies this has meant a focus on supply-side solutions. These concerns outweigh concerns for climate change and inclusive growth.
5. **The APEC sustainable energy investment landscape is characterized by independent, uncoordinated, and isolated actions.** APEC economies have adopted “go it alone” approaches for energy security and sustainability. The resulting uncoordinated range of domestic policies, government mandates, price guarantees, and incentives creates unintentional cross-border externalities that distort energy prices. Differing local standards and technologies limit market sizes and trade opportunities.
6. **Differences in natural energy resources, stages of economic development, and industrial sectors mean there can be no single sustainable energy solution for APEC economies.** The differences cause economies to act independently with short-term goals in mind and often to the detriment of the economy and the APEC region as a whole. Economies enact myopic domestic policies and do not consider the consequences of those policies on sustainable energy investment.

7. **There is a general lack of awareness as to the seriousness of the need for change. Myopia and distorted perceptions plague all stakeholders and are present at all stages of the sustainable energy value chain.** Politicians are politically expedient; often lacking the courage to enact unpopular but necessary policies. Regulatory uncertainty and an absence of transparent energy prices bias business towards making less radical, short-term investment opportunities.
8. **Progress on the adoption of energy efficiency measures is slow.** Subsidies and artificially low energy prices, weak or absent measurements mechanisms, low minimum standards, and with energy costs comprising a small percent of business or family budgets, all combine to create dull incentives for the adoption of energy efficient goods. Without adequate pricing and measurement, consumers find it difficult to quantify savings and tend to see only upfront costs.
9. **The lack of real global energy prices, and effective measurement mechanisms, are cited by business and investors as the single most important impediment to progress in sustainable energy.** Without effective measurement mechanisms for carbon and energy usage, it is impossible for the market to set real energy prices. Without real prices demand does not effectively influence energy consumption behavior nor does it pull investment into sustainable energy R&D and energy generation. Subsidies to fossil fuel energy and unpriced carbon distort energy prices.
10. **Regulatory uncertainty discourages investment in sustainable energy.** Business executives and investors were in rare consensus that governments must provide regulatory certainty in energy policy incentives. The long return horizons required for sustainable energy technology investments increase business concerns that governments will not honor their commitments over the long term.
11. **The lack of trade infrastructure is limiting investment in EGS. Free Trade Agreements have the mechanisms necessary to address trade liberalization for EGS, but are quiet on the matter.** Free trade agreements are silent on the topic of EGS. A real opportunity exists to use FTAs to increase market sizes, thereby promoting investment.
12. **There continues to be a bias toward fossil fuel energy solutions.** Existing energy infrastructure, established scientific and business capabilities, and existing government policies, create a bias for further investment in traditional and clean-fossil fuel energy sources. Policy incentives are biased toward supply-side solutions that encourage investments in fossil fuels rather than sustainable energy solutions.
13. **The lack of storage technology is the single largest inhibitor of sustainable energy development.** Nobel prize-level recognition and rewards need to be offered to solve this technology challenge. Without a breakthrough on storage, sustainable energy development is doomed to be only an “alternative” energy source.
14. **The critical choke point in R&D of sustainable energy is moving innovative ideas to the commercialization stage.** The critical point in sustainable energy innovation is in obtaining second and third stage financing to bring ideas to market. Our research found that funds are readily accessible to bring ideas through to the pilot stage. But regulatory risks concerns and expectations of low returns discourage further investment. Additionally, since energy is regulated, opportunities for software industry or pharmaceutical industry type returns are limited. These concerns further dull risk-taking.

### Action Agenda

This report argues for a strong role for APEC in creating a sustainable energy investment framework to set a clear direction for a sustainable energy future and to encourage and coordinate cross-economy collective action. The alternative, continued isolated and independent approaches, is scary to contemplate. But the framework must allow and encourage independent, individual, innovative and entrepreneurial activities that will provide the disruptive technological leaps so badly needed. Transformative and revolutionary change is needed to break away from the inertia that holds economies to fossil fuel energy sources. Solutions must grow from public-private partnerships.

1. **Accelerate and intensify APEC’s EGS ongoing efforts**  
*We urge APEC to move aggressively to define EGS, create harmonized standards, establish a certification and labeling agency, create exchanges for sharing basic research and best practices, and set ambitious energy efficiency goals for each economy.*
2. **Establish a separate and coordinated sustainable energy investment framework**  
*Similar to APEC security framework, we urge APEC to create an investment framework that will address market access and integration, facilitate trade, coordinate energy policies across economies, enhance trust between economies, and stimulate competition.*
3. **Build the trade infrastructure for sustainable energy**  
*We urge APEC to establish a taskforce to formulate model measures for sustainable energy within FTAs.*
4. **Make energy prices “real.”** Recognizing the intractability and magnitude of carbon accounting, economies within APEC must take meaningful steps to establish a price on carbon. APEC should not wait for other global institutions to take the lead. APEC is in a unique position to lead the world to a sustainable energy future.
5. **Establish regulatory certainty.** Transparency in energy policies and predictability of energy regulation is essential to reduce investment uncertainty.
6. **Strengthen and stimulate demand-side of sustainable energy.** Measurement and incentives are critical to creating the awareness. Without strong pull, investments will not flow.
7. **Create a framework for cross-border, business-government dialogues.**  
*We urge APEC to encourage public private partnerships to bring together those whose incentives for change are aligned so that they reach implementable solutions.*