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Powering the Future: Capturing new growth areas in the power ecosystem

The power landscape worldwide is continuously transforming. Global trends for new opportunities include distributed power generation, smart transmission & distribution, as well as energy efficiency. IE Singapore identifies the relevant trends and proposes ways for companies to capture a slice of the market.

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Summary

- // The power sector as an ecosystem presents substantial business opportunities for companies. Today's power sector is characterised by the shift from large-scale centralised power generation towards distributed systems. These systems use both conventional and renewable energy sources. Alongside this shift comes the need for smarter transmission & distribution networks as well as power management capabilities. This allows the grid to adapt to changes and ensures system efficiency.
- // The total capacity for distributed generation installed in Asia Pacific is expected to double from ~26GW (US\$30 billion) in 2014 to ~52GW (US\$59 billion) in 2023. This shift towards distributed generation is driven by the liberalisation of electricity markets and the declining cost of small-scale systems. Market opportunities in Japan, Myanmar and Thailand and the competitive landscape in these markets are highlighted.
- // Energy efficiency, known as the hidden fuel, is fast becoming a precious resource. The global revenue for energy efficiency retrofits of commercial buildings will grow from US\$68.2 billion in 2014 to US\$127.5 billion in 2023. Promising components of energy efficiency include aggregated cooling and cloud-based building energy management systems.
- // The incorporation of renewable energy and alternative generation sources requires enhancements to the transmission & distribution grid. Such modifications ensure the stability and reliability of electricity delivery. The smart grid revenue in Asia Pacific is projected to double from US\$16 billion in 2012 to US\$31 billion in 2020. One promising aspect of smart grids that has garnered substantial attention is energy storage systems.
- // The power market is undergoing dynamic changes and will take on a different form in the future. Soon, the boundaries segregating traditional power generation companies, transmission & distribution companies and companies providing energy management and ancillary services will be blurred. Over the next 5 years, new entrants from adjacent sectors are expected to enter the power generation, power transmission & distribution and power management spaces.
- // It is timely to capitalise on these positive trends. Some companies are already capturing these opportunities, thereby serving as guides for others. IE Singapore proposes strategies that both existing players and new entrants can adopt to tap these growth opportunities.

The Power **Ecosystem**

The traditional perspective of the power sector centred on large-scale, centralised and conventional power generation systems. However, the power sector today is characterised by a shift towards distributed power generation systems which employ a combination of conventional and renewable energy sources. Alongside this shift comes the need for smarter transmission & distribution networks and power management capabilities to ensure system efficiency. This view of the power sector as an ecosystem presents new and substantial business opportunities for companies.

The power ecosystem

1. Power generation

Power can be generated using a variety of conventional and renewable sources. This includes coal, oil, natural gas, solar, wind, hydro and biomass. Power can also be generated at a centralised or distributed scale, and can be grid-connected or off-grid.

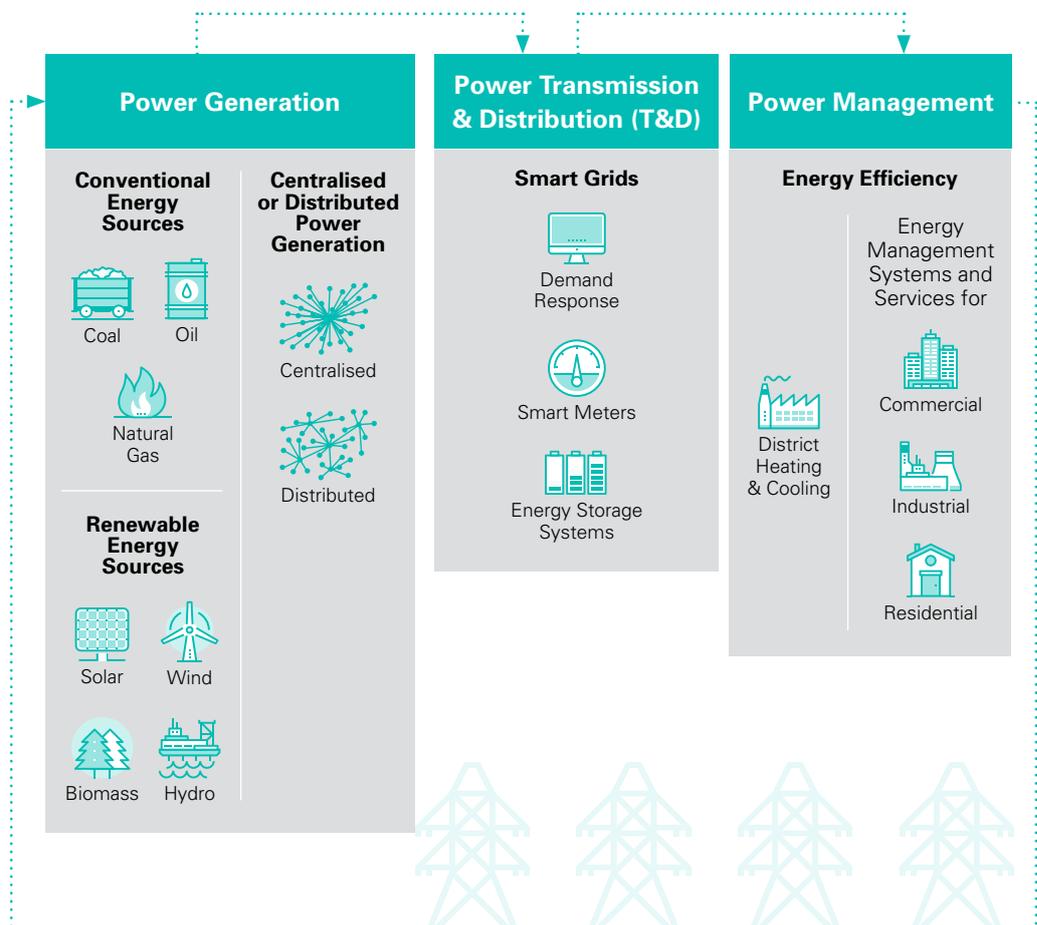
2. Power transmission & distribution

With the inclusion of distributed generation systems and renewable sources of energy, the grid needs to be equipped with capabilities to detect and react to real-time changes in supply and demand. This ensures the reliability and stability of electricity delivery.

3. Power management

Once power reaches the consumers, there is a need to manage consumption. The ability to monitor consumption has a direct impact on the demand for power generation capacity. Knowing how much is needed in real-time allows power producers to generate accordingly.

Figure 1: The power ecosystem.



Growth in renewable energy sources in Southeast Asia despite continued reliance on fossil fuels

Fossil fuels will remain dominant in Southeast Asia (SEA), and is expected to account for 78% of all power generation in 2035. Coal is the most abundant fossil fuel in SEA, with proven reserves sufficient to supply around 80 years of production at current levels. Coal use has also been rising regionally at double-digit rates since 1990, tripling its share of the energy mix to 16%. This is due to the lower price of coal relative to gas, as well as the higher export value of gas for countries that produce it.

Despite that, renewable energy sources are a growing source of energy supply in SEA. The technical potential for bioenergy - from feedstock such as agricultural crops and residues, animal residues and municipal solid waste - is large. The demand for solar, hydro and onshore wind is similarly growing. Renewable energy capacity in the region by 2030 is expected to be 1.8 times the electricity consumption in the region in 2007, and the additional realisable potential in the region could be as much as 12 times the current deployment of renewable energy.

IE Singapore recognises the importance of both conventional and renewable sources of power generation, and will continue to address opportunities pertaining to both areas.

Promising growth areas beyond energy sources

Across the region, the increase in small-scale power generation deployment is noteworthy. With the addition of these distributed systems, there is greater demand for better grid management. Moreover, as more countries work towards reducing energy consumption, energy efficiency becomes important.

Macro trends for distributed generation, smart grid and energy efficiency sub-sectors indicate a promising growth trajectory (refer to Table 1). Hence, the focus on the following sub-sectors:

Table 1: Growth potential for the three power sub-sectors.

Sub-sector	Measure	Growth to Date	Growth Projection	CAGR
Distributed Generation¹	Total capacity for installed distributed generation globally	US\$150 billion (142GW) in 2012	US\$206 billion (200GW) in 2020	5%
Energy Efficiency²	Global investments in building energy efficiency technologies	US\$36.3 billion in 2013	US\$60.2 billion in 2019	8%
Smart Grid³	Yearly smart grid spending	US\$20.8 billion in 2010	US\$65 billion in 2017	15%

1 "The Rise of Distributed Power", General Electric Company, 2014

2 "Energy Efficient Technologies for Commercial Building Construction", BCC Research, 2014

3 "Smart Grid – Beyond Smart Meters", ABB, 2012

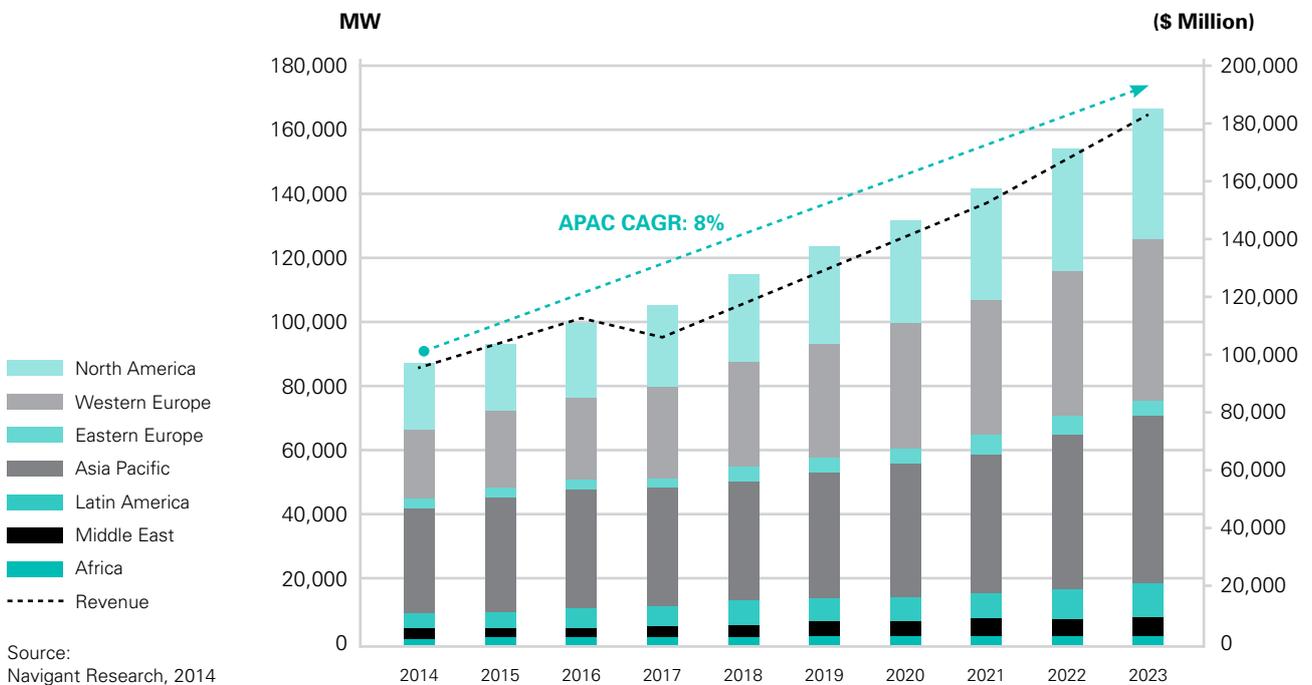
Distributed Power Generation

The shift from primarily centralised to distributed power generation systems is driven by three key trends. Beyond these trends, this section will look at the competitive landscape and highlight some market opportunities for companies in this space.

Distributed Power Generation

The total capacity for distributed generation (DG) installed in Asia Pacific is expected to double from ~26GW (US\$30 billion) in 2014 to ~52GW (US\$59 billion) in 2023 (refer to Figure 2). DG refers to power generation systems that produce energy on-site - exactly or close to where it is needed - starting from a few kilowatts.⁴ DG systems include diesel and gas generators, cogeneration and trigeneration, as well as small-scale renewable energy sources such as biomass, wind, hydro and solar, with rooftop solar installations being the most common today.⁵

Figure 2: Installed capacity for DG globally.



4 "Distributed Resources: Toward a New Paradigm of the Electricity Business", International Association for Energy Economics, 1998

5 "Distributed Energy – A Disruptive Force", Boston Consulting Group, 2014

Trends marking the shift from centralised utilities to DG systems

1. Liberalisation of electricity markets is stimulating the growth of small-scale power producers and suppliers

Traditionally, centralised power utilities and transmission & distribution networks are offered as a vertically-integrated product, owned and operated by one entity. However, more countries are transitioning towards a liberalised and open electricity market in which generation, transmission and distribution are offered as unbundled products. Electricity market deregulation in countries such as Japan, India, the Philippines and Singapore incentivises investments in fit-for-purpose power generation capacities to serve captive (as opposed to mass) consumers. This allows small-scale power producers and suppliers to play a bigger role in the electricity sector, thereby fuelling the growth of DG.⁶

2. High cost of building transmission & distribution infrastructure to reach peripheral areas encourages demand for DG as an alternative

Peripheral areas have scattered demand for electricity and lack the potential for economies of scale, thereby making DG a natural alternative solution. Since DG systems can be built on or near a customer's site in areas without access to the main grid, it can bring affordable and stable electricity through micro-grids for a localised area or direct sources of supply such as rooftop installations.⁷ Unlike a centralised supply system, on-site production reduces transmission & distribution costs, which otherwise amount to about 30% of the price of the electricity tariff paid by end-consumers.⁸

2. Substantial decline in the cost of DG is boosting its adoption worldwide

Table 2 shows the declining capital costs for solar, wind and gas DG systems. Moreover, high retail electricity costs further improve the economics of DG and shorten the payback period in several markets.⁹

Table 2: Declining capital cost expected for solar, wind and gas DG systems.¹⁰

	Year	Capacity (MW)	Capital Cost/kW (in US\$)			Declining capital cost for DG systems
			Solar	Wind	Gas Turbine	
Residential Installations	2010	< 0.005	\$7,200	\$7,802		
	2020		\$3,890	\$6,604		
	2030		\$3,508	\$6,051		
Commercial (solar/wind) and Industrial (gas turbine) Installations	2010	≤ 50	\$6,410	\$5,243	\$1,000	
	2020		\$3,558	\$4,287	\$950	
	2030		\$3,195	\$3,717	\$900	

6 "Energy Market Integration in East Asia: Deepening Understanding and Moving Forward", Yanrui Wu, Fukunari Kimura & Xunpeng Shi, 2014

7 "Southeast Asia Energy Outlook", International Energy Agency, 2013

8 "Distributed vs. Centralized Electricity Generation: Are we witnessing a change of paradigm?", HEC Paris, 2009

9 "Distributed Energy – A Disruptive Force", Boston Consulting Group, 2014

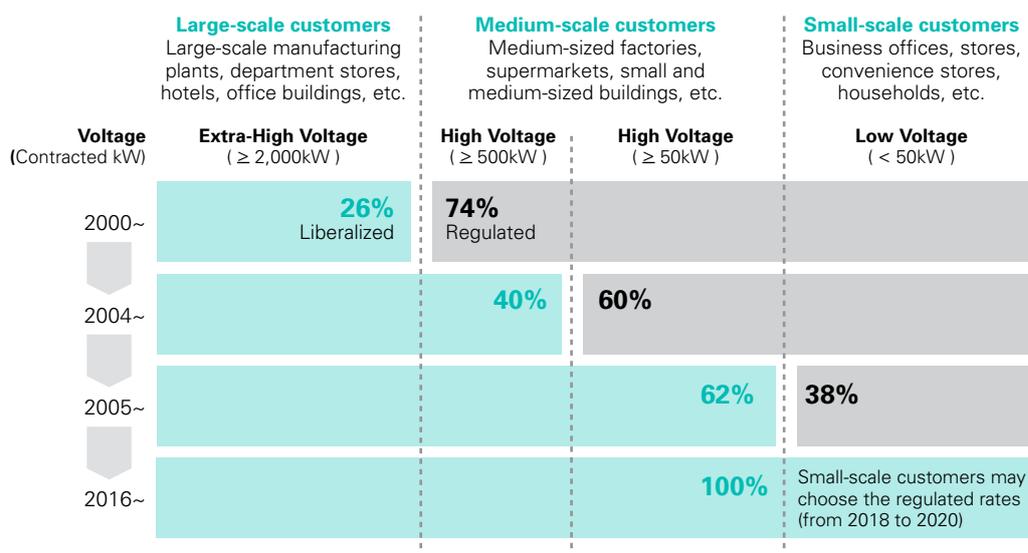
10 "Distributed Generation System Characteristics and Costs in the Buildings Sector", U.S. Energy Information Administration, 2013; "Energy Technology Systems Analysis Programme", International Energy Agency, 2010

Market opportunities for companies in the DG space

Within Asia, the fast-paced growth of DG seen in this region is expected to open up business opportunities like never before.

Many countries are planning the liberalisation of their electricity markets, with the ongoing liberalisation in Japan representing a timely example. The Japanese electricity market reform includes liberalising the sale of power to households and small businesses from April 2016 (refer to Figure 3). This opens a market of 84 million electricity retail contracts nationwide which are worth 7.5 trillion yen (US\$75 billion) to new power producers and suppliers.¹¹

Figure 3: Phases of electricity market liberalisation in Japan.



Source: TEPCO, 2014

As Asia’s last country to open up its economy, Myanmar is currently undergoing intensive industrialisation to spur growth. To succeed, improving electricity access to industrial zones in peripheral areas is required. Myanmar’s power transmission system is old, resulting in a 30% inefficiency loss and occasional blackouts¹² which hinder the optimal output of Myanmar’s 18 industrial zones.¹³ Infrastructure support, including transmission & distribution networks, is currently also minimal for the seven planned industrial zones that will be scattered from the capital.¹⁴ As refurbishing and building new transmission & distribution lines are costly, the government is encouraging existing and new industrial zones to build individual captive power plants with generation capacities between 50MW to 100MW to directly supply electricity.¹⁵

11 “Energy Market Liberalisation – Japan Inc. Makes Big Renewables Push”, Nikkei Asian Review, 2015

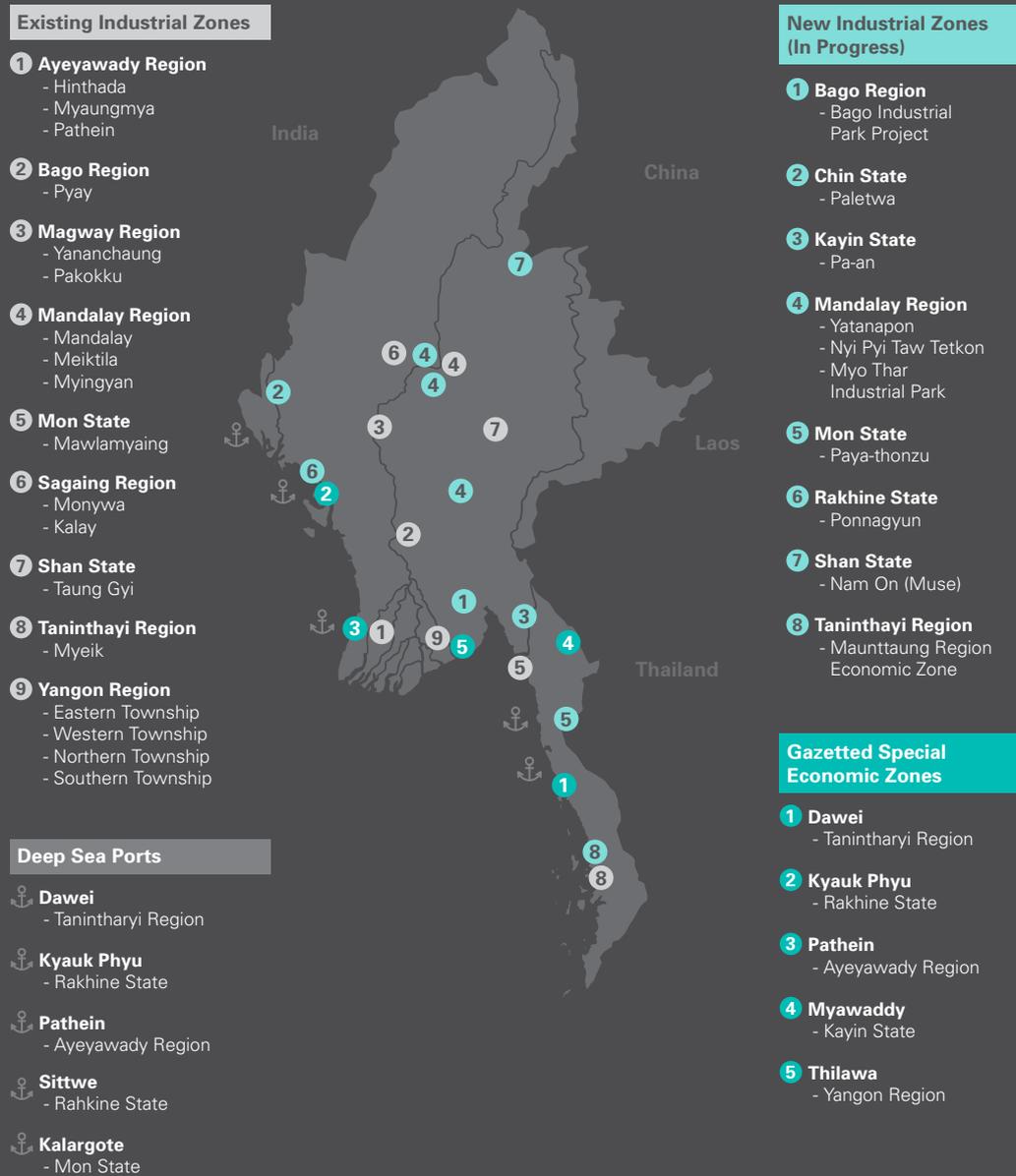
12 “Yangon Electricity Supply Board to Upgrade Transmission Lines in Myanmar”, Transmission & Distribution World, 2013

13 “The Review and Evaluation of Industrial Policy Especially SMEs Development of CLMV Countries”, ASEAN-Canada Research Partnership, 2014

14 “Economic Reforms in Myanmar: Pathways and Prospects”, Bangkok Research Centre, 2012

15 “Rangoon Promises 24-Hour Power to Residents During Summer”, The Irrawaddy, 2014

Figure 4: Locations of Myanmar's existing and new industrial zones, 2014.

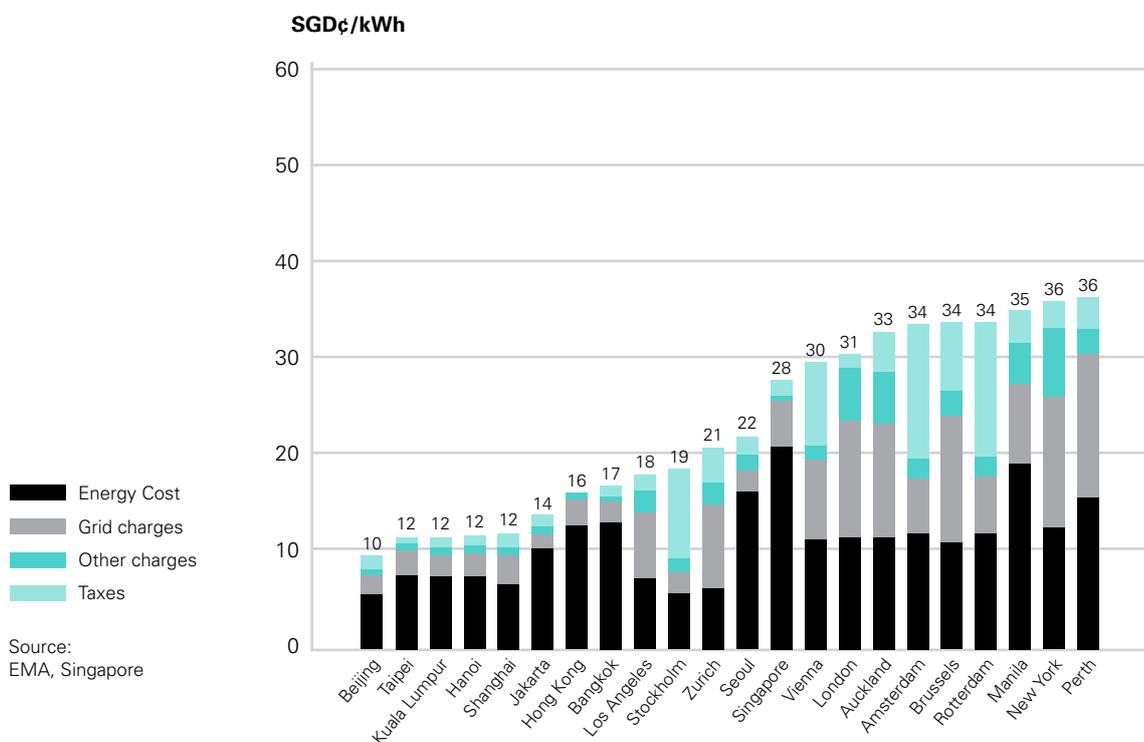


Source:
Myanmar Business Today,
Myanmar

The declining cost of DG, especially in countries with high retail electricity prices, is driving its growth.

The Philippines has the highest electricity tariff for residential consumers in Asia at US\$0.27/kWh (refer to Figure 5).¹⁶ This is prompting consumers to find cheaper alternatives. Moreover, the national solar rooftop target of >500MW by 2020 (including residential, commercial and industrial), feed-in-tariffs and the ability for owners to sell excess electricity generated to the grid is expected to further incentivise rooftop installations.¹⁷ This, coupled with a nascent solar leasing model, means that there are abundant growth opportunities in the market.

Figure 5: Comparison of residential electricity tariffs globally, 2013.



¹⁶ "Global Benchmark Study of Residential Electricity Tariffs", The Lantau Group, 2013
¹⁷ "A Power Plant on Every Roof", Philippine Daily Inquirer, 2014

The competitive landscape for DG in the region

For each of the markets mentioned above, existing players can serve as guides for companies planning an entry strategy.

The liberalisation of the retail electricity market in Japan has seen new entrants like gas providers (Itochu Enex), telecommunications companies (NTT, SB power), and restaurant chains (Watami Ecology). While these companies have a large base of existing customer networks and billing infrastructure, they need to build up the power generation and operation expertise required to produce and run an electricity retail business.

The opening up of Myanmar's economy has attracted Japanese, Chinese and South Korean power players (including J Power Co., China Power Investment Corporation, Korea Western Power Co., etc.) amongst others to develop Myanmar's power infrastructure. However, these players specialise in large-scale, centralised power plants (>500MW).

Solutions with a focus on small-scale generation and innovative business models like solar leasing could be complementary. This presents opportunities for Singapore-based companies to form productive synergies with local players.

Energy Efficiency

Energy efficiency, also known as the hidden fuel, is fast becoming a precious resource. This section looks at three promising components of energy efficiency, the regional competitive landscape and opportunities for companies in the energy efficiency space.

Energy efficiency (EE) is a way of managing and restraining the rise in energy consumption. This is especially important in light of diminishing energy resources. The EE sub-sector is wide-ranging and comprises energy savings companies (ESCOs), building energy management systems (BEMS), as well as district-level and building-level aggregated heating and cooling systems. This section will focus on the above-mentioned areas given their high growth potential in the region.

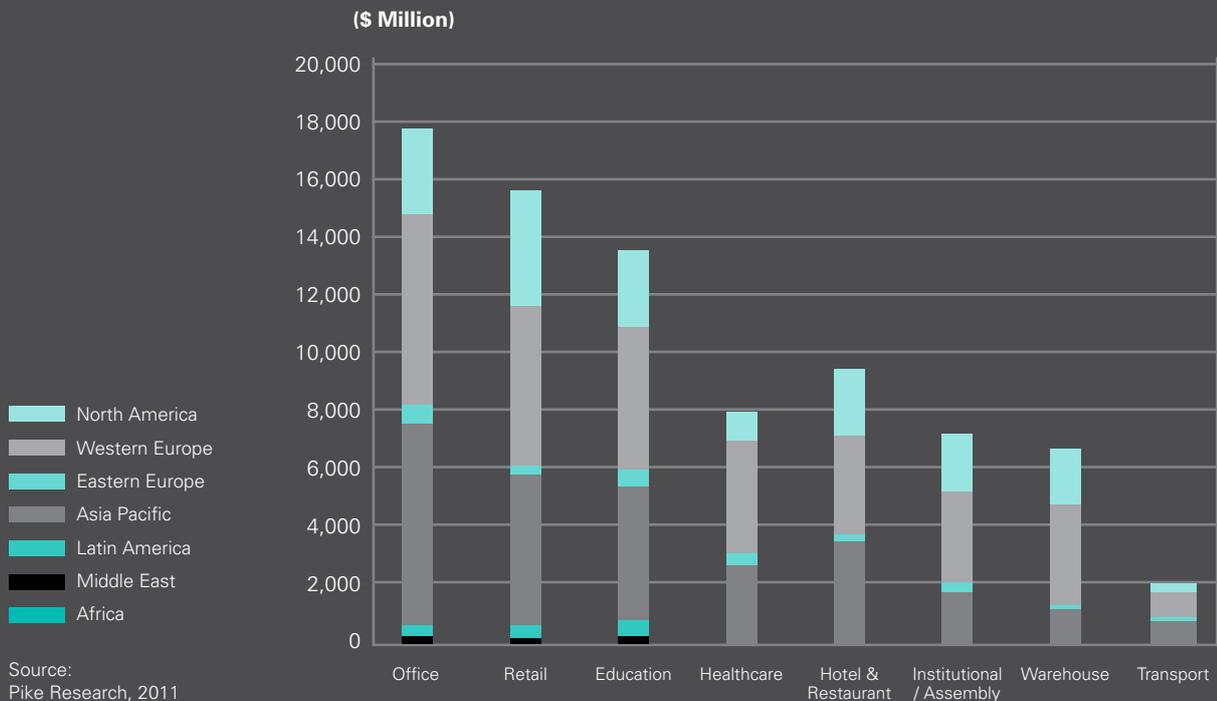
Other notable EE solutions include energy-saving glass and facades, light-emitting diodes (LEDs), green verticals and electric vehicles.

Growth potential for ESCOs, BEMS and Aggregated Cooling

1. In Asia Pacific, ESCOs have the highest growth potential in the commercial buildings sector (refer to Figure 6).

The global revenue for EE retrofits for office buildings will grow from US\$68.2 billion in 2014 to US\$127.5 billion in 2023 (CAGR: 7.2%).¹⁸ This growth is driven by high energy prices and government policies which encourage reducing energy consumption. Many SEA countries such as Indonesia, Thailand, Malaysia and Vietnam have introduced EE-related targets for the commercial sector at a national level.¹⁹

Figure 6: EE retrofits revenue by building type and region, 2011.



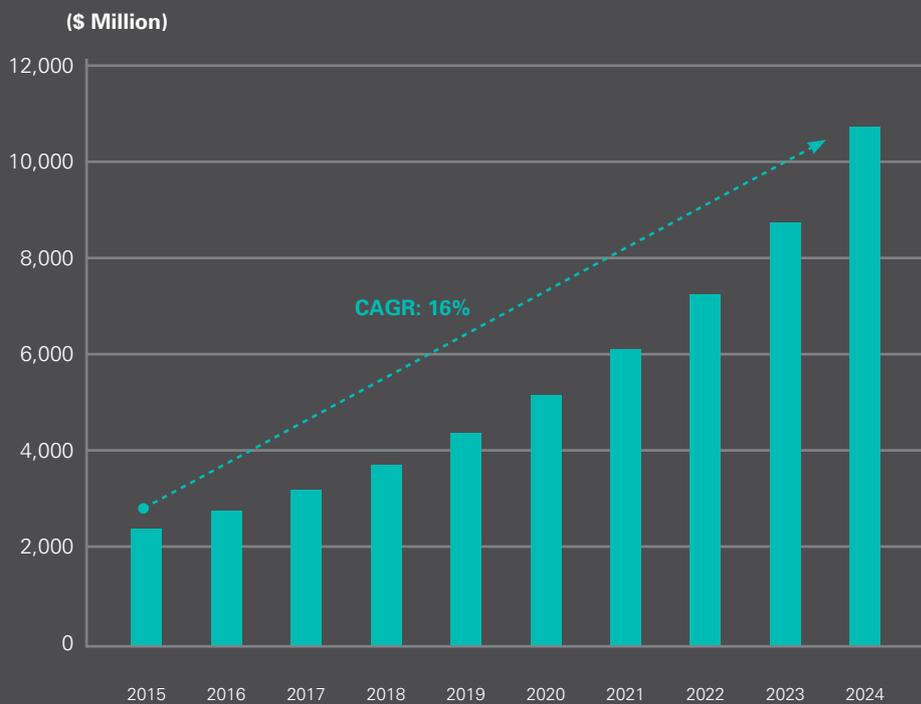
¹⁸ "Energy Efficiency Retrofits for Commercial and Public Buildings", Navigant Consulting Inc, 2014

¹⁹ "Market Potential in Energy Efficiency in Southeast Asia", Roland Berger Strategy Consultants, 2011

2. Development of cloud-based BEMS is enabling simultaneous energy management of multiple buildings from a central command centre.

The global BEMS market will grow from US\$2.4 billion in 2015 to US\$10.8 billion in 2024, with Asia Pacific taking the lead (Figure 7).²⁰ The broadening of BEMS capabilities, such as the development of cloud-based BEMS, will also expand customer segments to include players with geographically dispersed assets.

Figure 7: Global BEMS revenue.



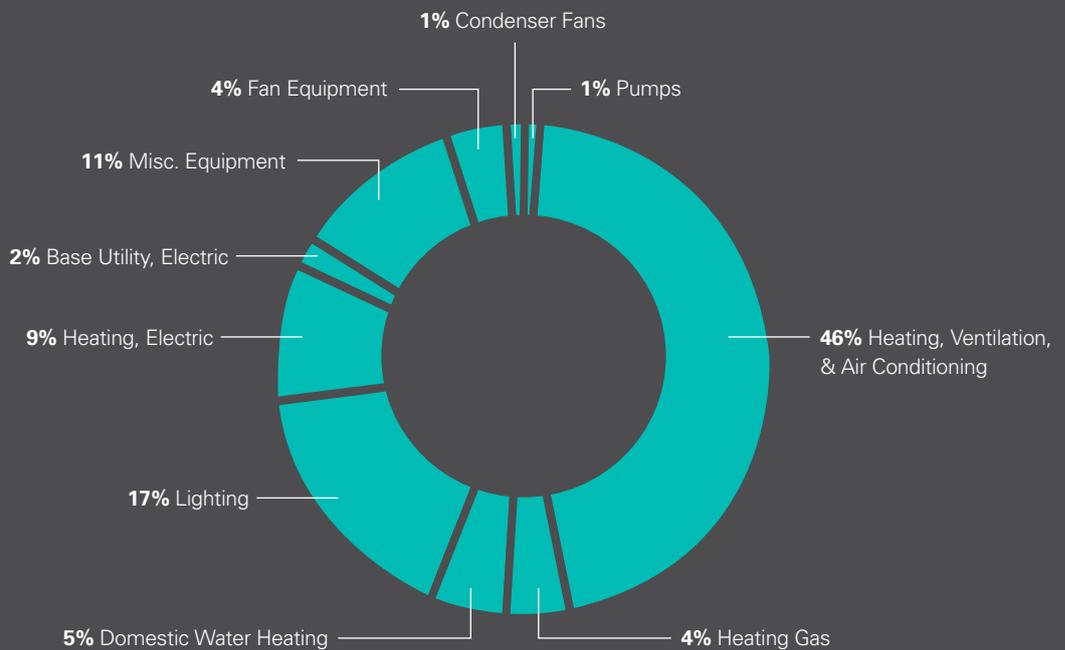
Source:
Navigant Research, 2015

²⁰ "Building Energy Management Systems", Navigant Consulting Inc, 2015

3. The large share of air conditioning (~46%) in a commercial building's energy consumption is driving the demand for energy efficient chiller systems (Figure 8).

Increasing efficiency can be done at the building level (retail cooling) or at the district level (district cooling), and can result in substantial cost savings for building owners. For example, district cooling is especially useful in densely populated areas such as commercial districts or new townships and cities. The global district cooling market is projected to grow from US\$16.9 billion in 2014 to US\$29 billion in 2019 (CAGR: 11.4%).²¹

Figure 8: Average commercial facility primary energy use splits.



Source:
Simes and Rosch Eng.
Consultancy, 2013

²¹ "District Cooling Market by Application – Global Trends & Forecasts to 2019", Markets and Markets, 2014

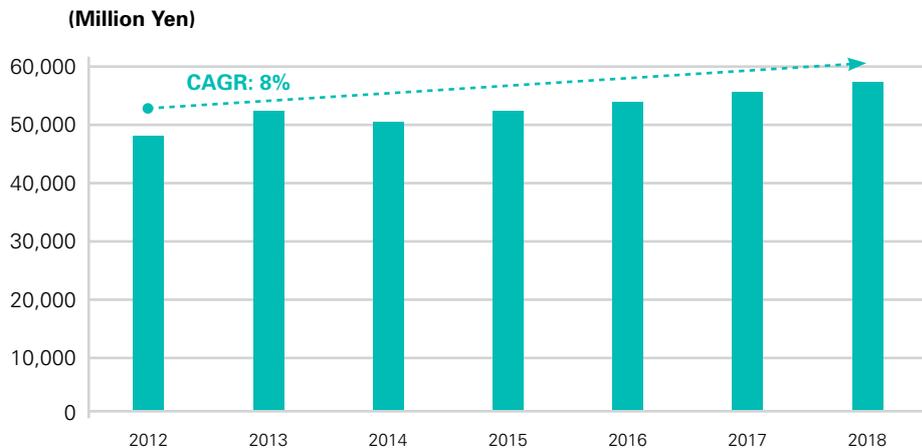
Market opportunities for companies in the EE space

Supportive regulatory frameworks and an increasing need to reduce carbon footprints represent a conducive environment for the adoption of EE.

Thailand has the oldest and most supportive EE regulatory environment for industrial and commercial sectors in SEA. Thailand’s Energy Conservation (ENCON) Act mandates over 1900 designated factories and buildings with electricity peak consumption of more than 1,000kW to conduct energy audits and submit energy conservation reports every three years. The ENCON Fund also has an annual budget of US\$225 million to boost EE adoption and encourage companies to implement commercial EE projects.

Japan is the only market in Asia to date with a government-led push for the development and deployment of demand-side management.²² Japan’s BEMS market will grow from US\$350 million in 2012 to US\$560 million in 2018 (refer to Figure 9). Singapore-based companies looking to scale can take the opportunity to develop partnerships with property developers holding portfolios of multiple commercial buildings.²³

Figure 9: BEMS market size in Japan.



Source:
Yano Research Institute,
Japan, 2013

²² “The Fast and Furious: Japan’s Race to Energy Management”, Greentech Media, 2012

²³ “BEMS/BAS Market in Japan: Key Research Findings 2013”, Yano Research Institute, 2013

China's exponential growth in urban density underscores the potential of district cooling. China's demand for cooling is expected to grow the most across the world between 2010 (0.5 exajoules) and 2030 (2 exajoules)²⁴. This is in line with an expected increase in its urban population by more than 75% from 2005 (527 million) to 2025 (926 million).²⁵ To meet these needs, China will see more than 200 new smart cities built in the next decade, with these smart cities likely to consider the use of aggregated cooling systems.²⁶

24 "IEA Roadmap Targets", International Energy Agency, 2013

25 "China's Smart City Projects and Developments", China Inroads, 2014

26 "2015 Smart City Summit & Expo", Taipei Computer Association, 2015

The competitive landscape for EE in the region

For each of the markets mentioned above, existing players can serve as guides for companies planning an entry strategy.

Although Thailand has a mature ESCO market, most of the focus for ESCO activity (about 70%) is on the industrial sector because that sector has dominated the country's energy consumption. However, as Thailand moves towards a knowledge-based economy, the growth of medium-to-large commercial buildings makes the commercial sector increasingly attractive to ESCOs.

Japan's BEMS market, though ahead of its regional counterparts, is still developing. Some players in the energy management space include local companies such as Fujitsu, Hitachi, and Panasonic. As these big players look towards developing cloud-based BEMS, it reaffirms the direction of Singapore-based companies who are developing expertise in this area.

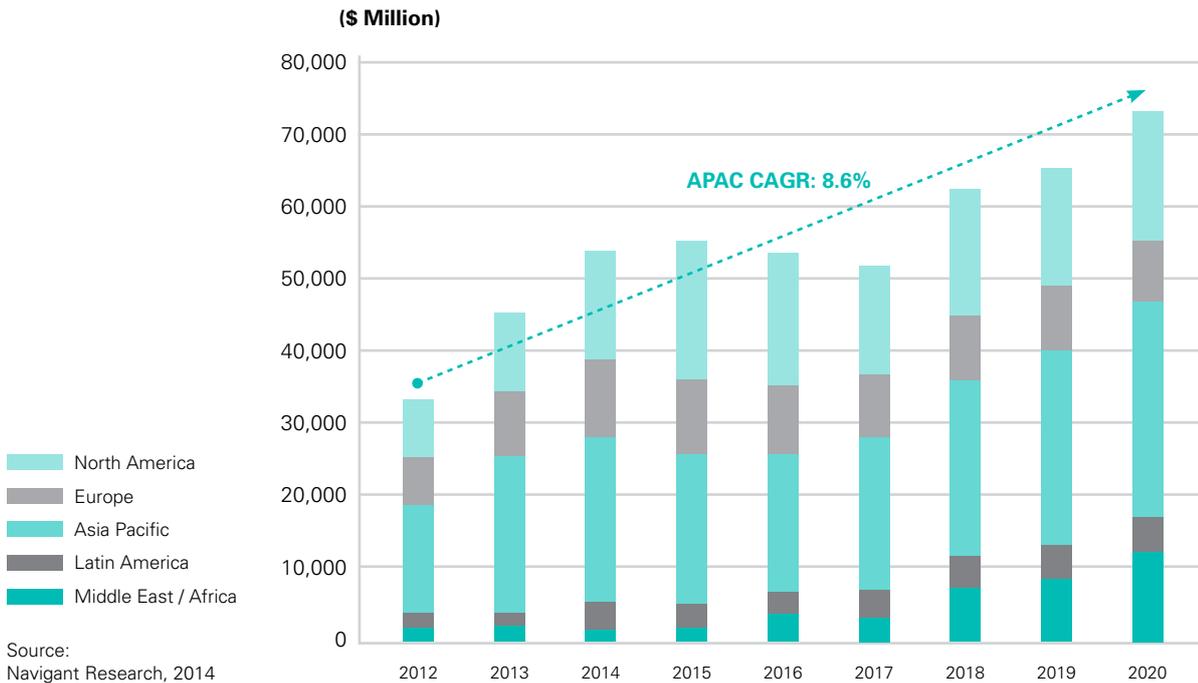
In China, there are currently only a handful of district cooling companies. The openness of Chinese developers to working with foreign companies offering complementary solutions represents positive news for Singapore district cooling companies, whose strengths lie in their ability to provide end-to-end solutions such as operating and maintaining assets.

Smart Grids

The incorporation of both renewable energy and new power generation sources requires enhancements to the transmission & distribution grid in order to maintain stable and reliable electricity delivery. This section looks at three promising components of smart grids.

The smart grid revenue in Asia Pacific is projected to double from US\$16 billion in 2012 to US\$31 billion in 2020 (refer to Figure 10).²⁷

Figure 10: Projected global smart grid revenue.



Smart grids use digital communication technologies to enable bidirectional flows of energy and information exchange between the utility and its customers. It integrates new technologies and equipment to detect and react to changes in consumption and supply, thereby increasing the efficiency and reliability of electricity delivery. Typical components of a smart grid include: substation automation (SCADA systems), distribution automation (advanced metering infrastructure or smart meters), as well as information and operations technology software and services (demand response and energy storage systems). Several trends relating to energy storage systems, smart meters and demand response are examined below.

²⁷ "Smart Grid Market Revenue Will Hit \$73 Billion Annually by 2020", CleanTechnica, 2013

Trends marking the shift from centralised utilities to DG systems

1. The potential for energy storage is the greatest where there is penetration of DG (utility-scale and small-scale) and a resulting need to balance loads.

With intermittent energy sources, energy storage systems ensure a stable supply of electricity throughout the day - making them important components of a smart grid.²⁸ Global revenue from utility-scale energy storage is expected to grow from US\$164 million in 2014 to US\$2.5 billion in 2024 (CAGR: 31%).²⁹ For residential-scale and commercial-scale energy storage, global revenue is expected to increase from US\$452 million in 2014 to US\$16.5 billion in 2024 (CAGR: 40%).³⁰

2. The deployment of smart meters is growing in parallel to the growth of DG.

The global smart meters market is expected to grow from US\$11.1 billion in 2014 to US\$18.2 billion in 2019 (CAGR: 10.2%).³¹ Smart meters installed across the distribution networks and on the demand side help utilities track the supply and consumption of electricity. This reduces electricity losses, including technical losses and theft, in many emerging markets today. India, for example, has one of the highest loss rates (21.1%) globally (global average: 12.5% in 2011).³² It is estimated to install 130 million smart meters by 2021.³³

3. Demand response is increasingly important in markets with high peak demands but a shortage of electricity.

Utilities are willing to pay for demand response capacity because it is cheaper and easier to procure than traditional generation.³⁴ One such market is Japan. Japan's demand response market is expected to grow from US\$120 million in 2014 to US\$490 million in 2019 (CAGR: 31.4%).³⁵ However, demand response requires a transparent wholesale electricity market to flourish. At this point, only a few markets in Asia Pacific meet this requirement.

28 "A Brand New Market Set to Grow 4000% in the Next Decade", Wall Street Daily, 2012

29 "Navigant: Utility-scale Storage Market Will Exceed US\$2.5 Billion by 2023", PV Tech, 2014

30 "Revenue from Distributed Energy Storage Systems is Expected to Exceed \$16.5 Billion by 2024", Navigant Consulting Inc, 2015

31 "Smart Meters Market Worth \$18.2 Billion by 2019", MarketWatch, 2015

32 "World Development Indicators", The World Bank, 2013

33 "Feature: India Smart Meter – Metering India Smartly", Asian Power, 2013

34 "What is Demand Response?", EnerNOC Inc, 2014

35 "Japan Demand Response Management System Market", MicroMarketMonitor, 2015

The competitive landscape for energy storage systems

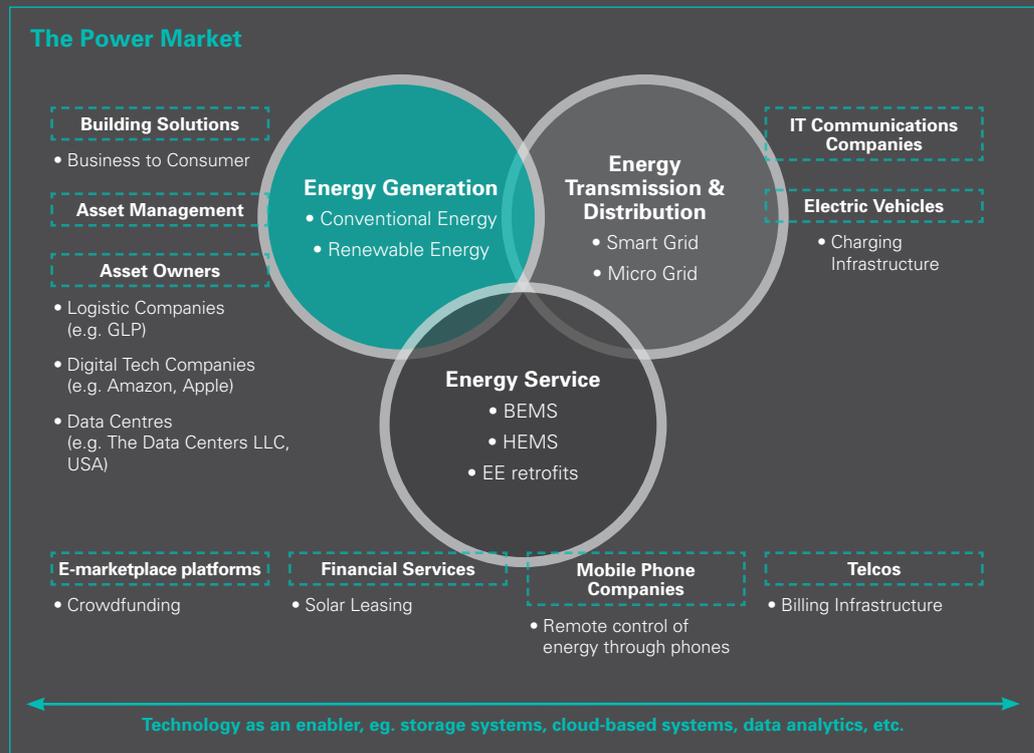
One of the key areas of smart grid research is energy storage systems, with substantial attention paid to grid and off-grid applications of different energy storage technologies.

There are many solutions providers in the energy storage field, including established names in the power sector such as ABB, GE, Bosch, AES and Tesla. There are also new entrants such as Aquion Energy and Primus Power. With the large number of companies, there is a variety of battery technologies to be deployed for different purposes. However, there is no leading energy storage technology to date, which leaves substantial room for companies to develop energy storage systems that can lead the market.

Anticipating Future Disruptive Forces **in the Power Sector**

There are many positive developments in the power sector today. It is also anticipated that the market will undergo dynamic changes and continue to evolve in the near future.

Figure 11: The evolving energy market in the next 5 years.



----- Disruptor

It is expected that the boundaries segregating traditional power generation companies, transmission & distribution companies and companies providing energy management and ancillary services will be blurred (refer to Figure 11). Over the next five years, new entrants from adjacent sectors will enter the power generation, power transmission & distribution and power management spaces. For instance, power generation will no longer be exclusively done by conventional power generation companies. Instead, it is expected that logistic companies, telecommunication companies, digital technology companies and data centres will also generate power for self-consumption, retail sale or both – and these are the disruptors.

Anticipating Future Disruptive Forces in the Power Sector

Today, there are several examples of disruptors from adjacent sectors entering the power sector.

// Global Logistic Properties, traditionally a logistic parks developer, is developing solar installations to power its logistic parks.

// SoftBank, a telecommunications and Internet service provider in Japan, is riding on the wave of electricity liberalisation by tapping on its existing customer networks to sell electricity as a bundled package with its telecommunication services.

// Apple, a world-renowned digital technology company, already owns several renewable energy plants which power its offices, data centres and retail stores. It aims to eventually be 100% powered by renewable energy.

Over the next decade, it is almost certain that disruptors will enter the energy market, resulting in increased competition among existing players. At the same time, opportunities will be created for new entrants into the market. For smaller companies and those currently not in the power sector but have related capabilities, it is now an opportune time to diversify and capitalise on new opportunities for growth.

Strategies for Companies to Capture Power Sector Opportunities

It is timely to capitalise on the positive trends. Some companies are already capturing new opportunities, thereby serving as guides for others. For both existing players and new entrants alike, IE Singapore proposes strategies that companies can adopt to tap these growth opportunities.

Traditionally, a few “big boys” of the power sector have dominated the power generation, transmission & distribution and management spaces. However, many countries are now opening up their power sectors, and this serves as an invitation to smaller power players and non-traditional power players to play a more significant role. New entrants also bring with them new technologies and business models that can disrupt the status quo. For both existing players and new entrants alike, the following strategies can assist companies in tapping power opportunities.

Build internal capabilities

In order to pursue power-related projects, including power plants, grid automation, and energy management platforms, it is vital for companies to build internal capabilities - namely in manpower and technology.

// Manpower

Besides ascertaining the role it wants to play in the sector, the company must have the manpower with the relevant skills and know-how to execute the role. For example, to develop and own assets, the company must have a good understanding of the power plant development process. This includes project financing, project development and management skills, as well as the expertise to assess project bankability.

// Technology

To build up the solution offerings of companies, IE Singapore encourages companies to move beyond providing only system integration services. Companies should strive to possess proprietary technology and solutions to gain an edge over competitors. Companies can employ unique technologies and solutions in its projects either through acquisition or licensing.

Build partnerships

To enter new markets, companies may find it necessary to have local partners to function more effectively. Local partners can provide access to the domestic market, reduce labour costs, provide immediate on-site assistance to customers and in countries with language barriers, as well as liaise with customers and the authorities.

Build track record

IE Singapore strongly encourages companies to build their overseas track record, especially pertaining to innovative business models and products. Pro-actively proposing new projects is one way of creating a track record. For example, the first step for new market entry for a new solution or business model could be a demonstration project. This showcases the company's capabilities and helps to gain access to downstream projects. IE Singapore is currently working on several platform projects in the region that represent relevant avenues for companies to showcase certain technologies, solutions and business models. Another way to build track record would be to collaborate with other Singapore-based companies. By combining different capabilities, services and products, a partnership can provide a comprehensive offering to strengthen their value proposition.

International Enterprise Singapore

International Enterprise (IE) Singapore is the government agency driving Singapore's external economy. We spearhead the overseas growth of Singapore-based companies and promote international trade. Our vision is a thriving business hub in Singapore with Globally Competitive Companies (GCCs) and leading international traders.

Trade has always been the backbone of Singapore's economy. In addition to promoting export of goods and services, IE Singapore also attracts global commodities traders to establish their global or Asian home base in Singapore. Today, Singapore is a thriving trading hub with a complete ecosystem for the energy, agri-commodities and metals & minerals trading clusters.

GCCs are a critical growth engine for the next phase of Singapore's development. GCCs compete on the global stage against the very best in their industries. They contribute to Singapore's economic resilience, develop Singaporeans into global business leaders and strengthen the Singapore brand. Through our Global Company Partnership, we work with Singapore-based companies in their various stages of growth towards being globally competitive. We customise total solutions in capability building, market access and financing for these companies as they internationalise.

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