POWER PURCHASE

Electricity drives the engine of opportunity in the modern world. It allows our children to study by light. It powers the innovation in our factories. From telecommunications to transportation, power is essential to virtually every aspect of our increasingly dynamic and interconnected world. As a result, investment in power infrastructure must be a part of any strategy for economic development. This is true for both broad economic growth initiatives in emerging countries and targeted rural growth initiatives in developed countries.

The transformational nature of power projects does, however, come with risks. Given that power projects are most essential where there is a power shortage in the market, these projects often represent a pioneering level of investment and financial complexity in these markets. As a result, it has become common place to adopt a durable agreement that cements the predictability and durability that is needed for any long term business venture. This agreement is called the Power Purchase Agreement (PPA) and has helped to drive the growth and development of independent power projects around the world.

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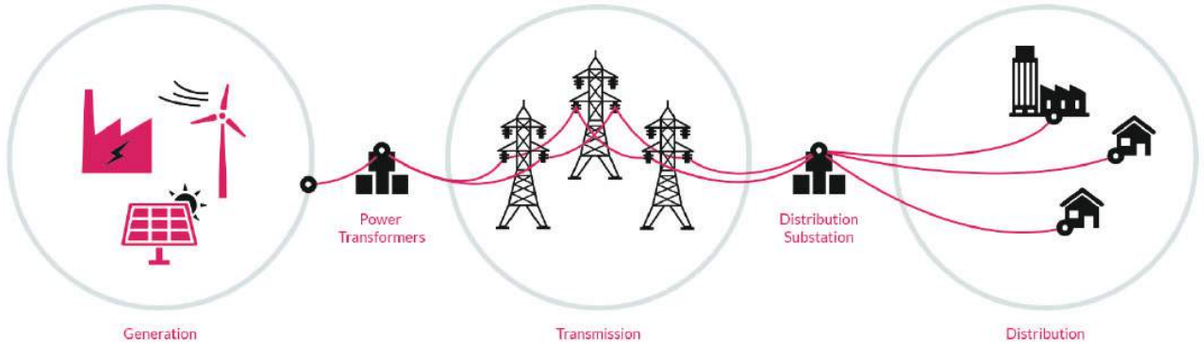
Power Generation Markets

This is an overview of how our homes and businesses are supplied with the electricity generated by power plants. It highlights the different types of power generation facilities and explains how electricity is bought and sold. It also explains the different players who are involved in the power generation market and the lifecycle of a power plant.

The diagram below highlights the different segments of the power market. Those segments are: (1) power generation, (2) power transmission, and (3) power distribution. Power generation is the process of generating electrical energy from various sources of primary energy. Transmission is the movement of this energy at high voltage over long distances from producers to distribution companies. Distribution companies then transport the energy over distribution networks and finally deliver the energy to homes and businesses.



Wholesale & Retail Markets

There is a dis tinc tion be tween the bulk power pur chase mar ket and the retail elec tric ity pur chase mar ket. Power is pur chased in bulk by off takers (buy ers) from the power pro ducer at or near the point of generation.

This power is then trans mit ted through trans mis sion lines and distribution sys tems to re tail con sumers and other end-users. There may be a number of changes in the “own er ship” of the power before it reaches re tail consumers.

How much energy can a power plant produce?

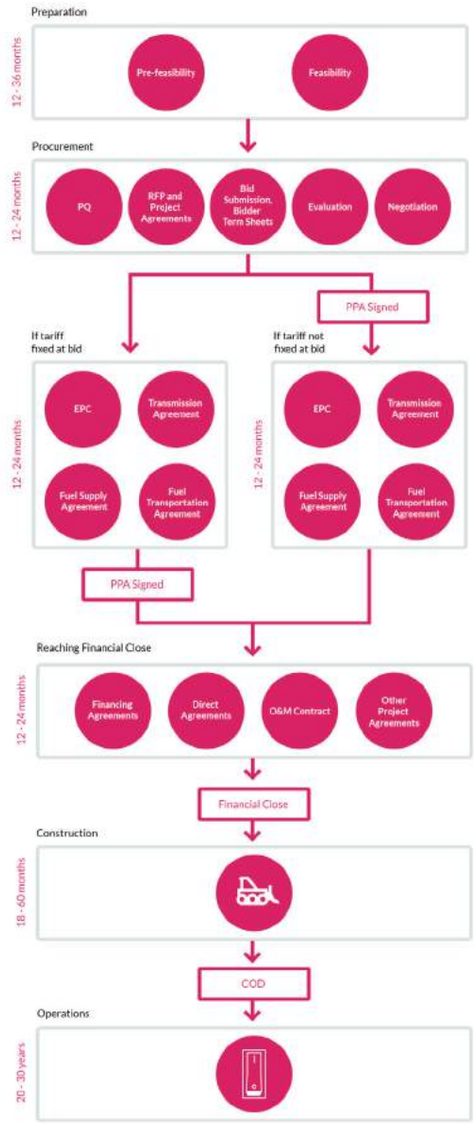
Power generation plants are measured by the number of megawatts (MW) that they are capable of producing. A megawatt is a unit of measurement equal to 1,000,000 watts. A kilo watt (kW) is equal to 1,000 watts of energy.

How is power bought and sold?

A kilo watt hour (kWh) is equal to one thou sand watts of electricity used continuously for one hour. Similarly, a megawatt hour (MWh) is equal to one million watts of electricity used continously for one hour. Capacity is pur chased and sold in MW and in many cases is paid for regardless of whether the capacity is ac tu ally used. Energy is purchased and sold in MWh or kWh and is paid for only when consumed.

Lifecycle of a Power Generation Project

The following graphic provides an overview of a power generation project including the preparation, procurement/negotiation, construction, and implementation. The PPA is a critical part of the procurement phase of the pro ject. Even though a PPA may take considerable time to negotiate, it will govern the project for the next 25-30 years and establishes the foundation for the financing, development, construction, operation and maintance of the project.



The Power Purchase Agreement (PPA)

What is a PPA?

The agreement that governs the sale and purchase of power is known as a PPA or power purchase agreement. A PPA is a contract between two parties, one who produces or generates power for sale (the seller/pro ducer/project company) and one who seeks to purchase power (the buyer/off taker). This contract is sometimes referred to as an offtake agreement.

Origins of a PPA

A PPA is merely an instrument in tended to facilitate the sale and purchase of electrical power. As such, it only comes into being once the prospective buyer (the off taker) has made a series of important decisions. These decisions can include the need for power, the available sources of power, the buyer's economic ability to purchase power, the power generating technology desired, and the location of the power plant.

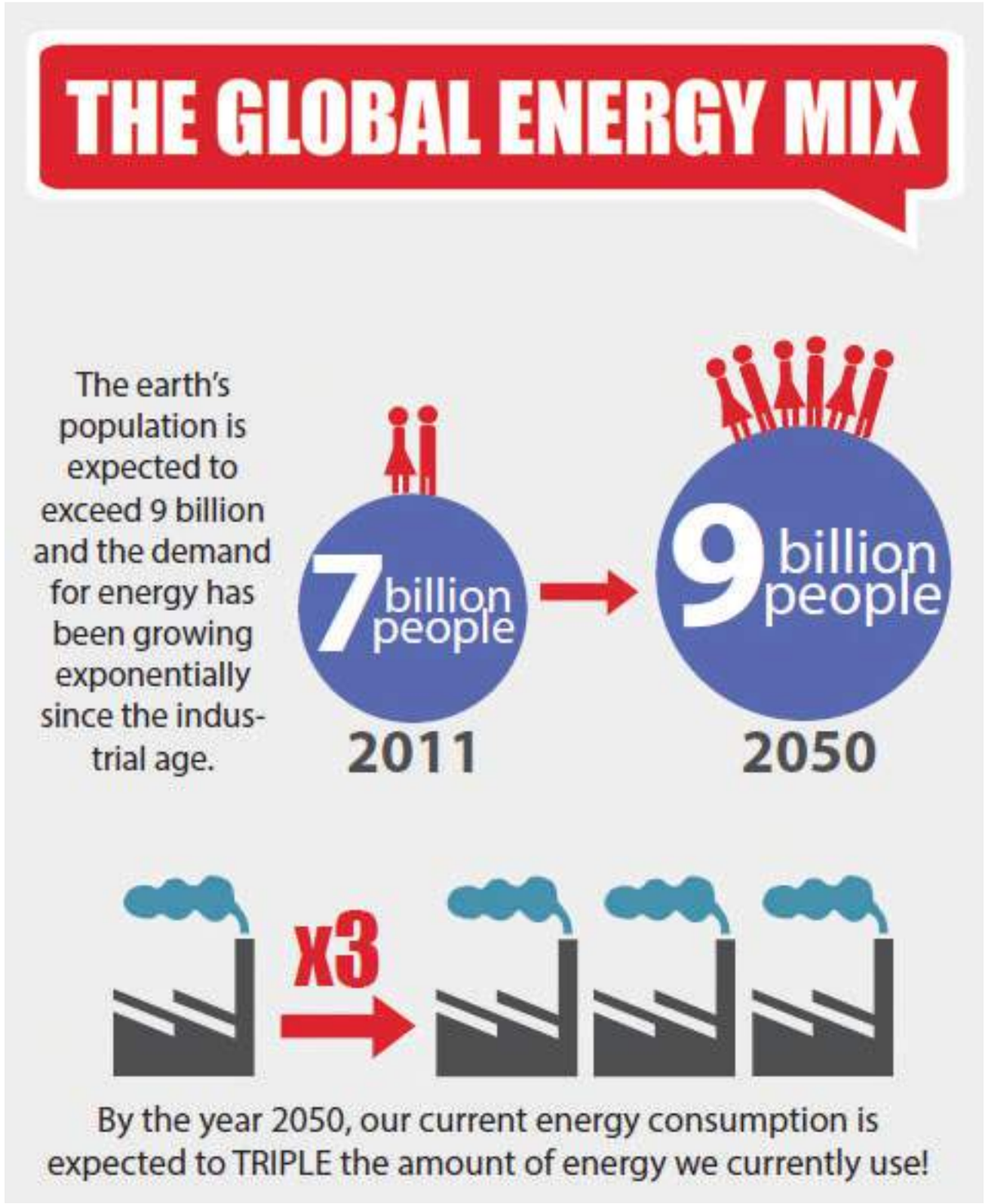
Power Demand

Before anything else, the offtaker will need to assure it self of the demand for power. A study will need to be undertaken to as certain not only current power demand, but also any anticipated changes in demand over time.

Budget and Technology

After identifying the need for power, the offtaker must identify potential sources of power. This determination will depend on the approximate tariff at which it can afford to purchase power, the fuel and technology to be used, and where the power generation facility should be located. The determination regarding the offtaker's budget will go hand-in-hand with the selection of power generating technology. Certain technologies are more expensive than others, but may be desirable due to their ability to supplement their power sources when demand is greatest, or because of their perceived environmental benefits. Government policy on the appropriate over all energy mix for the country may also affect the decision.

Source: http://cldp.doc.gov/sites/default/files/Understanding_Power_Purchase_Agreements.pdf



Source: http://energyblog.nationalgeographic.com/wp-content/uploads/2013/06/University-of-Toronto.jpg

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OVERVIEW

Driven by energy policy and regulation, the global power markets are undergoing profound change with significant price risks emerging. The negotiation of a Power Purchase Agreement (PPA) is therefore the most crucial element in the investment process. Negotiating a successful PPA is the only way that stake-holders and buyers can negotiate a legal framework to support a commercial return and mitigate the significant risks of the global power market. Led by an accomplished practitioner with over thirty years of experience in the power sector, you will become a PPA negotiation expert and return with a tool box of expert briefings, projections and checklists covering all aspects of the many facets of the PPA process. It will lead you through all forms of energy risk that the PPA mitigates from market, through credit, liquidity, operational with a particular focus on regulatory risks in the key power markets globally. At the end of this course you will be able to negotiate a contract or review a PPA and know if it meets your assets needs.

LEARNING OBJECTIVES

- Have better understanding of the roles played by various stakeholders in the PPA – developers, utilities, governments, manufacturers, construction companies, financial institutions, and the public
- Understand important contractual terms in specific detail to assist in development of future contracts or execution of existing contracts

COURSE LEADER

James Bowen is President of Momentum Development Corporation, which provides advisory and management services to clients in the energy sector, including banks, investment funds, and principal investors. As a veteran attorney and consultant in the energy industry, James has valued hundreds of power plants, integrated utilities, transmission and distribution systems, and upstream, midstream, and downstream energy assets. His areas of expertise include power purchase agreements, tolling agreements, options, and trading. James taught for nearly twenty years at McKinsey & Company's internal training programs and was an adjunct faculty member at the U.S. Military Academy atWest Point. He has lectured at Harvard University and the University of Texas. Prior to founding Momentum Development, James was a consultant with McKinsey, a litigation attorney with Akin Gump Strauss Hauer & Feld LLP, & an officer in the U.S. Army. He holds a J.D., cum laude, from the Harvard Law School, an M.Sc. in Financial Management from the University of London, and a B.S. in Economics from theU.S. Military Academy

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