Is the “International Power Producer” a relic of the past?

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We are all familiar with the classic IPP structure, but perhaps now is the time to review the reasons underpinning it and reassess whether or not these still hold in Asia today.

At the start of the independent power phase, most markets had a single monopoly utility who supplied all the power through owned generation; delivered the power through a network of transmission and distribution lines that they also owned and then sold it to captive customers who had no choice but to purchase the power. The more advanced markets included some regulation of the above structure; in more developed countries this regulation was well structured – in less developed countries it was non-existence, ad hoc, or worse, subject to the whim of Government policy.

The risks that were evident in those early days included:

- Single off-taker and no other sources of revenue;
- High capital cost project but unable to move it once built;
- Long economic life of project;
- Significant risks during construction; fewer technical risks after comissioning;

- Electricity is a political commodity and can become a political minefield; and
- Fuel that may have uncertain delivery and price.

The IPP structure developed to manage these risks:

- PPA's were necessary because there was no other way to sell electricity into the market;
- The PPA usually passed fuel risk to the off-taker either as a tolling contract (energy conversion agreement) or through complex pass-through pricing provisions;
- Government guarantees were necessary because of the risk that, once built, the incumbent utility would not pay, or the Government or regulator would change the tariff and make the project uneconomic because of the political pressures to keep tariffs low;
- International lenders were necessary because the local markets in many developing countries had almost no local banks and certainly none with the capability to finance something as large as a power station; and
- International legal advisors were necessary to document the transaction to the satisfaction of international equity and debt.

In summary, IPPs brought technical and commercial expertise, funding and financing. Plants were generally built on time, to a high quality but also often at a high price.

The question I would like to pose in my talk today, is, "Is this structure still relevant today, or has it become a historic relic"? And worse, is there still a role for the "international" Power Producer?

We are seeing many different structures starting to emerge in Asia as electricity markets reform here.

We can tackle the question from two angles; a "top down" or a "bottom up" approach. Firstly – from the bottom up - have the underlying drivers changed so much that structures need to change to match them? Secondly, can we view the current structures and do a "top down" analysis to see what drives them. I will use the Philippines as a case study for the top down approach, as it is a microcosm of these changes – with both market and non-market environments and still with many of the risks we saw in the original IPP environment.

To start with, it is important to understand **why** the PPA's of the late 80's and 90's were entered into as it helps us compare the environment then to the environment of today.

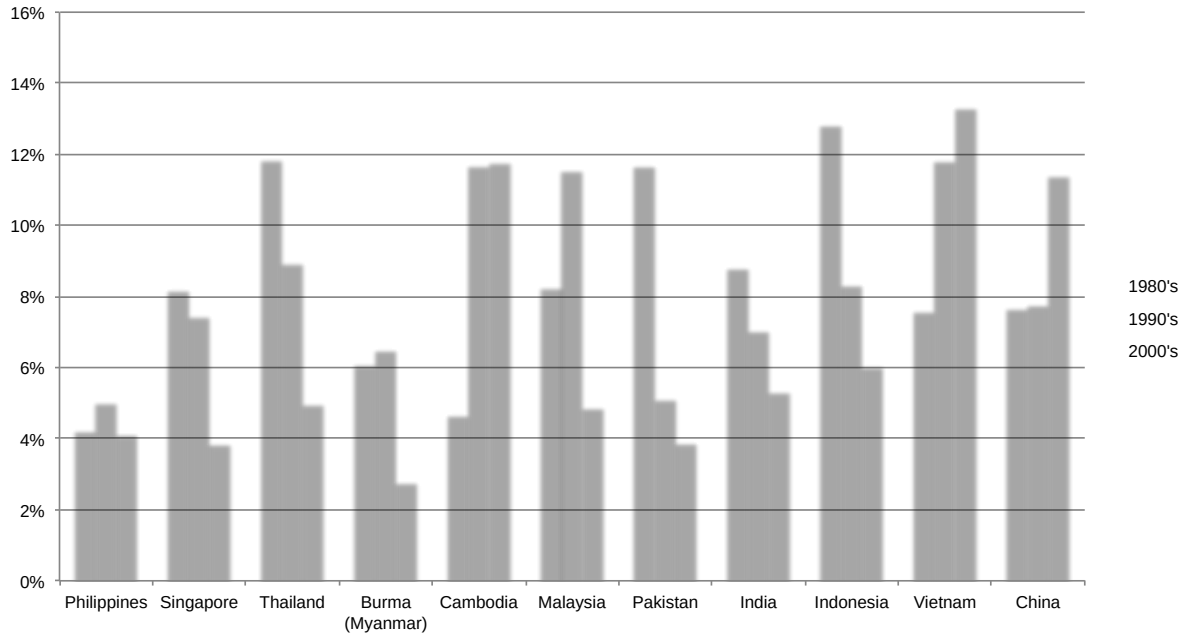
At that time:

- Demand was growing strongly in many Asian countries due to high economic growth;
- Local utilities were unable to keep up with the growing electricity demand because of capital and staff constraints; and
- Reforms in the UK and the USA had meant that utilities were cash rich but growth in the domestic markets of both these countries was limited – going offshore seemed like the way to invest and grow.

Overall you had the perfect convergence of need meeting opportunity.

And now?

Figure 1: Annual average growth rates of selected Asian countries



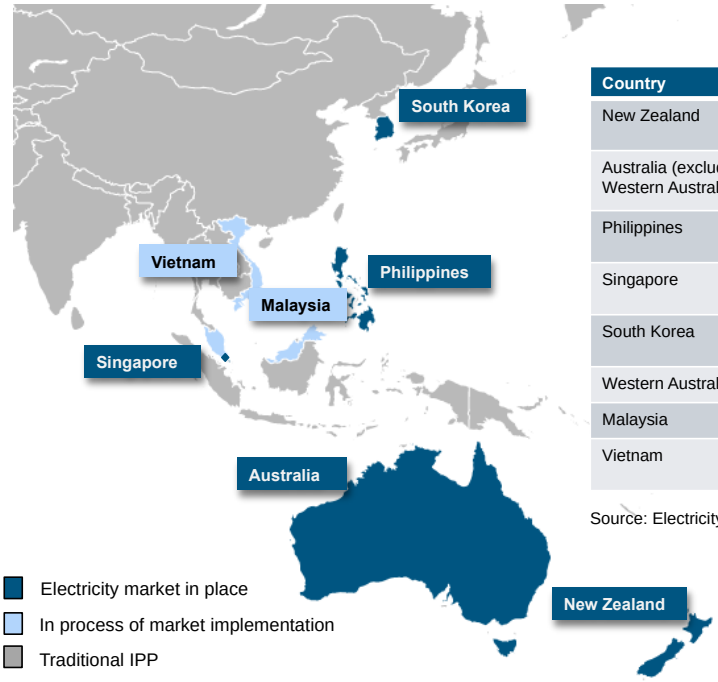
We can see from the graph that some of the countries that were popular for IPP's, such as Thailand and Indonesia, are now experiencing much lower growth than they were in the 1980's and 1990's. With less growth comes less pressure for additional investments.

At the same time, various issues in home markets and problems with overseas projects have highlighted that going offshore is not always the panacea it was perceived to be. Companies are now more risk averse and more focussed on fixing the problems in their home markets rather than expanding for expansions sake.

Many "internationals" have left Asia – to be replaced in some instances by locals and pan-Asian companies (more on that later).

Revenue certainty: To PPA or Not to PPA

Figure 2: Current Status of Electricity Markets in Asia



Country	Electricity Market	Market Start
New Zealand	New Zealand Electricity Market (NZEM)	October 1996
Australia (excluding Western Australia)	National Electricity Market (NEM)	13 December 1998
Philippines	Wholesale Electricity Market (WESM)	26 June 2006 (Luzon); October 2010 (Visayas)
Singapore	National Electricity Market of Singapore (NEMS)	1 January 2003
South Korea	Korea Power Exchange (KPX)	April 2001
Western Australia	No market	
Malaysia	No market	
Vietnam	No market	Expected 2014 (Pilot Operation)

Source: Electricity Regulatory Authority of Vietnam

As the figure above indicates, a number of markets in Asia have already moved to a merchant environment. One of the benefits of a market is that it gives all generators a clear route to market – while the volume and price may not be absolutely certain, it is possible for most players to make a reasonable estimate of how much generation they may dispatch in each market and at what price. This is not the same level of revenue certainty as a contract but it makes a better fall-back position than having to rely on a Government guarantee in a politically charged industry. In these markets we are seeing a development of many different contractual forms to supplement the market, from forward markets and exchanges in Australia, to bilateral contracts in the Philippines. The number of counterparties each generator may have has increased – rather than one single PPA offtaker, they now have multiple (often smaller) counterparties for slices of the offtake plus some exposure to the spot market.

This has the benefit of spreading the credit risk and recontracting risk.

Overall, selling in a merchant environment involves more effort – the competition is every day (for dispatch into the market) or every year (for recontracting smaller offtakers) – compared to the PPA approach where the competition is "once and for all" when the original PPA tender/negotiation takes place.

Who guarantees?

During the Asian financial crisis at the end of the 1990's, Governments discovered what it meant to offer a Guarantee. Falling currencies meant rising tariffs given that many tariffs had significant dollar denominations. Some countries, such as the Philippines, managed some minor renegotiations. Others, such as Indonesia cancelled entire projects – including some that were supposedly closed. Some, such as Malaysia, rode out the storm. The crisis highlighted the strengths, and the weaknesses, of Sovereign Guarantees and these days many fewer are on offer.

Figure 3: Examples of where Government Guarantees still exist

Indonesia

	Early 1990s	Mid 2000	2011	2012
Project	**1st Gen IPP**	**Cirebon**	**Central Java**	**Rajabasa and Muara Laboh**
Type of Guarantee	Support Letter	Confirmation Note	Guarantee Agreement	Business Viability Guarantee
Addressee	Ministry of Finance	Ministry of Finance	Co-guarantee between IIGF and GOI with "Amount Sharing"concept	Ministry of Finance
Coverage	Blanket	Blanket	Payment Guarantee, performance guarantee, termination guarantee	Obligations of PLN under PPA, termination guarantee
Not Covered			Seller EOD, tax for special facilities and indemnity	Non Fast track II project, performance guarantee

Vietnam

	Early 2000	2011
Project	**Phu My 2.2 and 3**	**Mong Duong**
Coverage	Performance guarantee; payment guarantee, project termination guarantee, and 100% of foreign exchange convertibility of revenues	Performance guarantee; payment guarantee, project termination guarantee, and 30% of foreign exchange convertibility of revenues
Not Covered		Only up to 30% of foreign exchange convertibility of revenue; Transport of coal supply

China

	Mid 1990s	Current
Project	**Laibin B**	**Non-existent**
Coverage	State Planning Commission guaranteed on provincial performance guarantee), the Ministry of Electrical Power guaranteed on tariff stability and the State Administration for Foreign Exchange guarantee on currency transfer and convertibility	

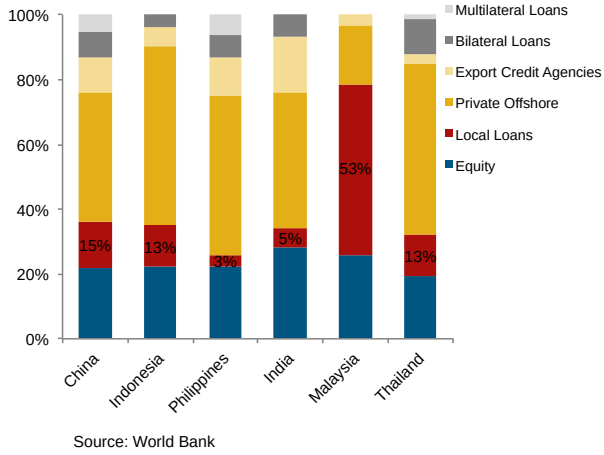
The number of Asian countries offering Government Guarantees is much lower now than previously, meaning that a structure that relied on this for credit support is under stress. With no Guarantee – how else can projects ensure timely payment by off-takers, particularly if uncertain times bring falling currencies and/or rising fuel prices?

Banking

"In the beginning", with the exception of Malaysia, few locals banks participated in funding IPP projects. The big funders came from the large international banks – such as the US, European and Japanese banks. More recently however we are seeing local banks being very much more prominent and well capitalized than they were previously.

Figure 4: The changing finance situation in Asia

2005 Proportion of local financing in Asia IPP



Source: World Bank

Recent IPP financing sources

	Capacity	Financial Close	Amount raised	Lenders
Indonesia				
Wayang Windu	400	2006	U$298m	Standard Chartered
Tanjung Jati-B Phase II	2*600	2008	U$2.2bn	JBIC, Tokyo-Mitsubishi UFJ, Sumitomo Mitsui Banking Corp and BNP Paribas
Central Java Power Plant (CJPP)	2*1000	2012	U$4 bn	JBIC and a club of Japanese banks
Vietnam				
Mong Duong 2	2*620	2011	U$1.5 bn	BNP-Paribas, Credit Agricole, HSBC, ING, Mizuho, Natixis, SMBC, Societe Generale, Standard Chartered, Unicredit, CIC Bank and DZ Bank
Vung Ang 1	2*600	2012	U$1.5 bn	HSBC, China Development Bank, BTMU, Credit Swiss, JBIC, SMBC
Thailand				
Nong Saeng		2011	U$1.2bn	ADB, JBIC, Mizuho and local banks Kasikorn Bank and Siam Commercial Bank

Currently, there is significant local debt in India, China, Philippines and growing amounts in the other Asian markets, highlighting a move away from exclusively foreign and MLA/ECA support.

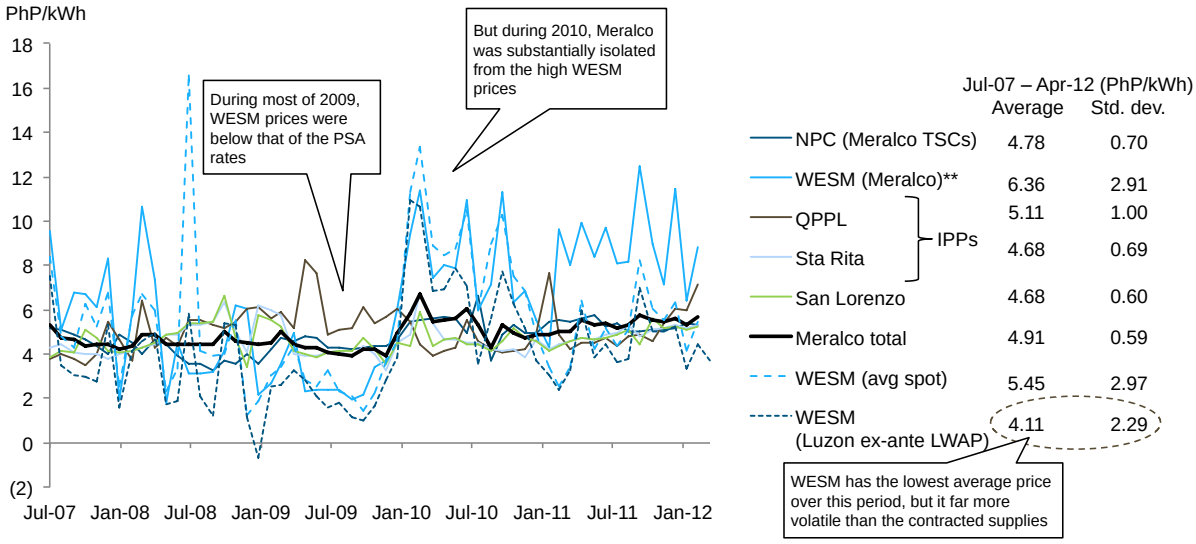
As international lenders exit the picture, so do international advisors. The locals are starting to build entire industries in each Asian country – including local advisors and lawyers. This is also meaning an increased diversity in documentation and structuring – whereas in the 1990's there was one "standard" structure, by the 2010's we are seeing a myriad of different structures.

What are the implications of these changes?

Do you get a better return from a PPA or the market?

This question is hard to answer as PPA's no longer exist in many places where there are markets. However, we can review the question in the Philippines which still has both for the time being. This has highlighted that from the purchasers perspective, power is, on average, cheaper when purchased from the market but comes with significant volatility. Thus conversely we can assume that for a developer the PPA is giving higher returns than the merchant plant in competitive markets.

Figure 5: Average monthly cost of Meralco's purchased power*, (2007-12 YTD)



Note: * Philpodeco, MMPC and Bacavalley which contribute less than 0.2% of total and SEM-Calaca which commenced in Jan-12 are not shown;
** Includes adjustments for Line Rentals, Net Settlement Surplus, Market Fees and other billing adjustments
Source: Meralco; PEMC; TLG analysis

Bottom up Case Study: Philippines

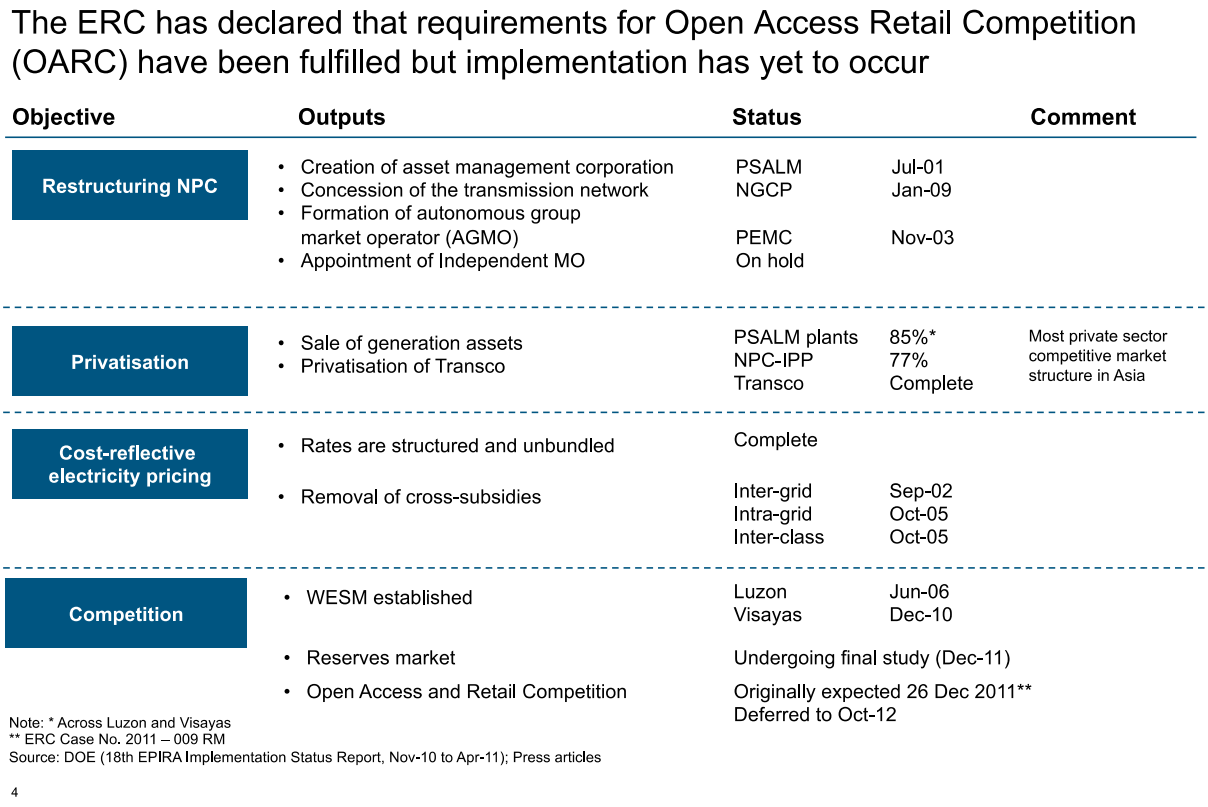
In order to evaluate what this might all mean, I will now look from the "Bottom Up", using the Philippines as an example.

The Philippines has both market (WESM) and non market ESI environments. The market operates in Luzon and Visayas while in Mindanao no market (not even any balancing arrangements) is present.

Compared to the early IPP days, the existence of the market in Luzon and Mindanao gives potential IPP's a wide range of ways to sell power: directly into the spot market; via contracts with retailers (Distribution Utilities such as Meralco or Electricity Cooperatives).

There is still the risk that generators cannot sell directly to customers, because Open Access, although much mooted, still has not occurred in the WESM and there is no market at all in non-WESM places in Philippines.

Figure 6: Still waiting for Open Access in the WESM



Open Access will pose problems of its own when it commences, with retailers possibly losing customers and meaning that they may be less keen to sign up the longer term deals needed to underpin financing.

Compared to the IPP days, there is still a very large risk that regulators may unilaterally try and change the tariffs of IPP projects (by preventing the retailer from passing the costs on to customers) – one of the reasons previously for getting a Government guarantee. The ERC (local regulator) has an unfortunate history of not allowing power purchase tariffs to be passed on to customers, even when the power has been competitive sourced.

Figure 7: Recently ERC-approved Power Supply Agreements

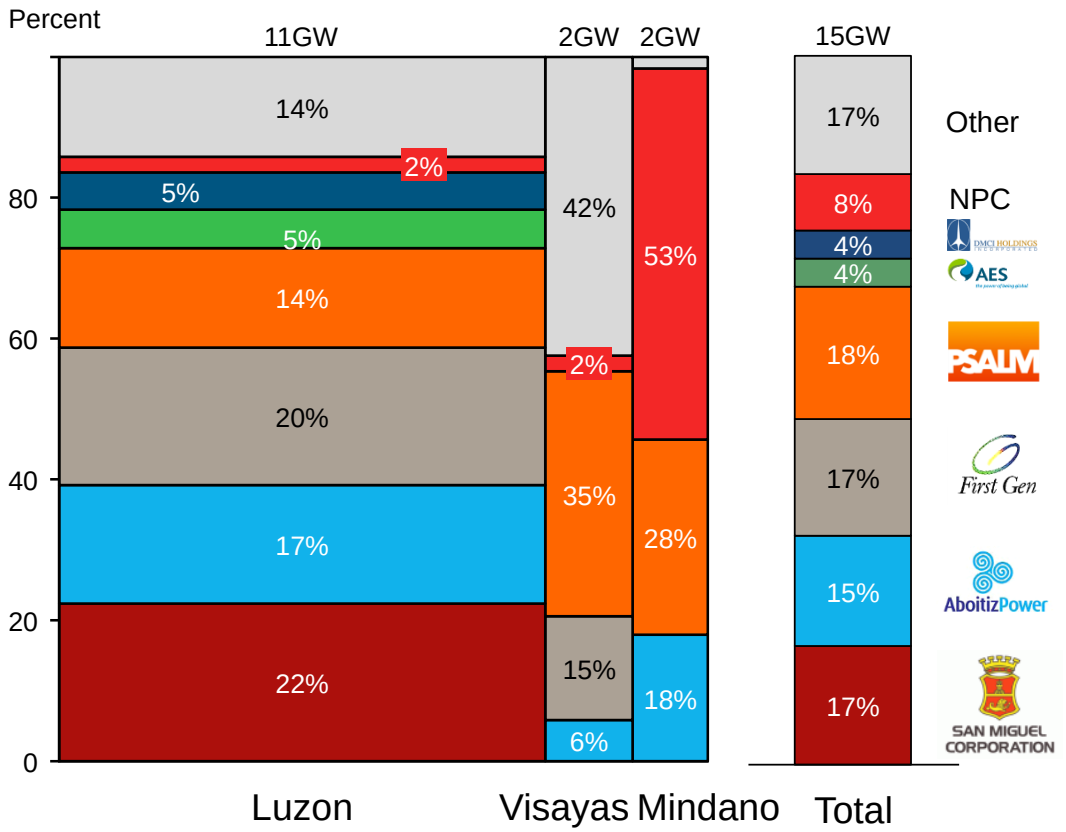
Approval date	Parties	Period (years)	Contracted capacity / energy	Provisional base rate (PhP/kWh)	Approved base rate (PhP/kWh)	Difference in base rate
Jul-11	Isabela I EC & Lucky PPH Int'l	15	2.5 - 7.5 MW	5.0000	4.0199	(19.6)%
Jan-11	FBPC & APRI	3	37 GWh (1st year)	3.9778	3.7772	(5.0)%
Jan-11	ORMECO & Power One	15	30 GWh p.a.	7.4600	7.4434	(0.2)%
Jan-11	San Fernando ELAPCO & APRI	3	226 - 271 GWh p.a.	TOU* (LRAC = 6.9443)	3.7772	(45.6)%**
Dec-10	Negros Occidental EC & FFHC	10	"As available"	4.1920	2.8978	(30.9)%
Dec-10	VRESCO & FFHC	10	3.0 - 3.5 MW	4.1920	2.8978	(30.9)%
Feb-10	Ileco I & PNOC-EDC	5	101 - 126 GWh p.a.	4.8800	4.8800	-
Feb-10	VECO & CEDC	25	105 MW at 90% LF	5.3160	5.2310	(1.6)%
Nov-09	VRESCO & SCBI	30	19 - 35 GWh p.a.	4.7500	2.8628	(39.7)%

Note: * Rates structured on Time Of Use (TOU) scheme and no average given; ** Rate difference relative to APRI proposed LRAC
Source: ERC

Equity and debt, however, is not in short supply. Local lenders are much more prevalent in IPP transactions and local electricity companies are now at the forefront of the asset ownership in the Philippines. The following figure shows the wide range of ownership currently seen in the Philippines, compared to pre-EPIRA when the power stations were mostly either owned by NPC or contracted to NPC.

The locals have been learning over time from international players and technical competence is reasonable. Currency remains a concern for kit sourced overseas (the Philippines has no domestic industry) but with Chinese and Korean equipment manufacturers more common than American or Europeans ones, it's a different kind of currency risk that the USD issues of the past.

Figure 8: Installed capacity shares by owner (2012)



However, not all is perfect in the new, locally owned and locally financed merchant market.

Although a significant share of the capacity in the market uses "locally sourced fuel" (or "no fuel") such as the gas fired power stations, the hydro and geothermal power stations, coal fired power stations are still importing coal and facing both price and currency fluctuations. Prices paid in both the spot and contract markets are typically in Peso's – meaning generators have to manage this risk.

There are other gaps in the market that the new structures are not filling. In Luzon, where the market is best developed and the players are most robust, some new plant has come along. The following diagram shows the GN Power project as an example. This project is underpinned by numerous small contracts with local utilities and has used Chinese kit with Chinese (as well as local) financing.

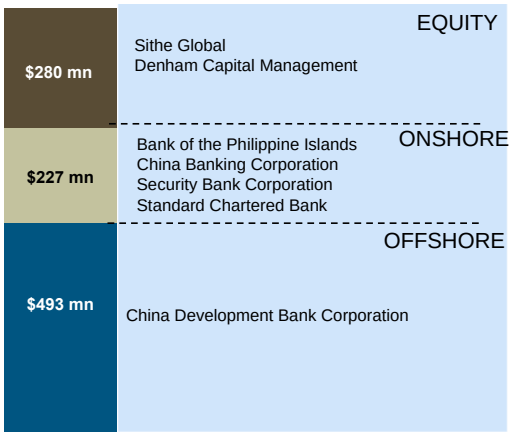
Similarly, in Visayas where the market is newly opened there are plants entering the merchant market. These new projects are underpinned by contracts with local retail companies (Distribution Boards and Electricity Co-operatives) and highlight that the new structures can work.

Figure 9: GN Power - an example of what is working

GN Power coal power plant is 28% equity financed by US sponsors and 68% debt financed by Chinese and Philippine entities

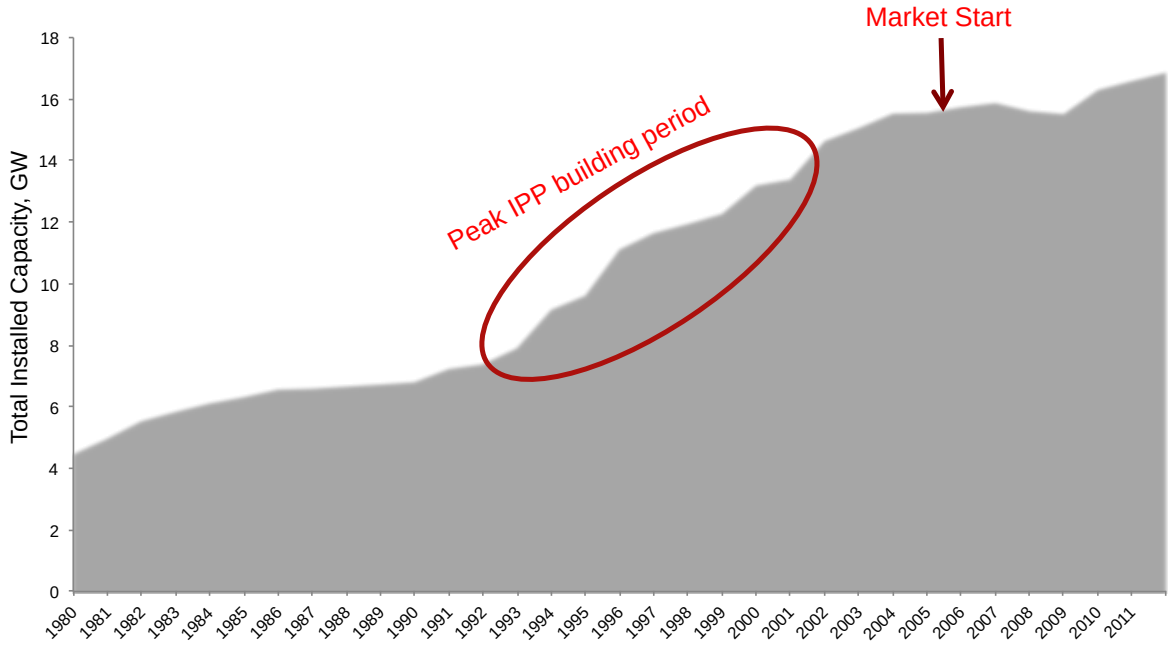
- GN Power is a greenfield 2 x 300 MW coal plant located on the Bataan Peninsula (Luzon); Coal is sourced under long-term offtake agreements with Indonesian suppliers
- Construction commenced in December 2009 and is expected to be operational in Q4 2012
- Financial closing was achieved in 2010 to raise U$1 billion in funding
  - Equity was funded by Sithe Global and Denham Capital Management ("Denham") while the Engineering, Procurement and Construction (EPC) counterparty was CNEEC (China)
  - US$227 million secured term loan facility was funded by a consortium of commercial lenders led by Banco de Oro (BDO) Unibank – the Bank of the Philippine Islands, China Banking Corporation, Security Bank Corporation, and Standard Chartered Bank
  - US$493 million secured term load facility is funded by China Development Bank Corporation, it was the first participation by a Chinese financial institution in a non-recourse offshore project financing
- Political and commercial risk insurance is provided by China Export &. Credit Insurance Corporation ("Sinosure")

Decomposition of financing sources



Other projects in Luzon are mooted, but the actual increase in capacity in Luzon has been lower since market start than the previous 20 years. While there was a degree of overcapacity that explains this, the new arrangements have not been tested in an environment of tight supply-demand.

Figure 10: Generation Capacity, Philippines, GW



Go further south and you find Mindanao; a part of the Philippines that does not have access to the WESM but has a great need for new power. Brownouts are common in Mindanao and in dry years when the local hydro stations run less, the outages have serious consequences. This region shows a similarity to the environments seen in the late 1980's and 1990's at the peak of the IPP rush with a desperate need for power due to growing demand combined with difficult operating conditions. It's a place ripe for an IPP to bring in the right kit – or is it?

In this region, a process has recently been run to tender for a new power station. 21 regional EC's came together to run a process to attract international players to build a new 300MW plant in Mindanao.

It seemed to be exactly the type of process the EPIRA (the Reform Law in the Philippines) envisaged as part of the reforms. However this process has struggled for a number of reasons (none of which relate to the security situation in Mindanao, which just serves to exacerbate the situation).

Firstly, the EC's are not-for-profit entities and have no legal way to raise funds. This has had a number of unforeseen consequences – not least of which is that they have no money to hire advisors to run the process and have no way to put aside the amount of credit support that a standard international investor might expect for a project of this nature.

The lack of funds seriously hampered the efforts by the group to run the process – including a lack of international legal and financial advise. The upshot of this was that documentation was not (ahem) world class.

Secondly, the regulator in the Philippines still operates as though the market were un-reformed. All power purchases by retailers must be approved by the Regulator before they are allowed to be passed through consumers. This is not an unusual or unexpected requirement; however the processes that the ERC use to determine pass throughs neither fit with the process nor timescales of an international tender for new power.

The ERC process is based purely on cost and takes no account of the process used by the retailers to source power. In many jurisdictions, a well run competitive process is, by definition, the source of the least cost power and no further checks are required as to the price.

Worse, the ERC does not approve these contracts quickly. There are instances of contracts actually expiring (for term) before gaining full approval – a period of nearly five years.

In the case of the AMRECO project, the EC's were not able to offer any degree of certainty that the ERC would allow pass through of the price and thus included a clause (to protect themselves) that any changes by the ERC would be passed through in the contract (or a no fault termination allowed that enabled both sides to walk away, with zero damages paid out). While the termination was a theoretically reasonable approach, given the time it was expected to take to gain approval (or disapproval) the power station would have been pretty much complete! Not a risk most IPP's are willing to take.

The combination of the EC credit risk, lack of funding and lack of certainty re tariff significantly deterred investors. A poll of various international lenders indicated that they would not be prepared to even discuss the project.

An obvious solution, one would think, would have been to seek funding and/or assistance from one of the institutions set up in Asia for just this purpose….. however both the ADB and the World Bank now have such strong "anti-coal" policies that neither were interested in helping out.

How does a small but essential new power station get built in such an environment when the Government is unable, through its own legislation, to offer a Guarantee to bridge the gap between the need and the capability of delivery?

What is the role of organisations like the World Bank and the ADB, when they allow communities to suffer in the dark because of ideological environmentalism?

How can a market and reform deliver new capacity when the Regulatory Framework has yet to catch up with the rules or the commercial realities facing players?

To date, the only "solution" to these problems in the Philippine's has been to go local. Local sponsors, local lending, local documentation, local risk. This is effectively locking out international players from this market.

The Philippines is not the only market in Asia where we see this – in China there are effectively no non-renewable power projects with international sponsors any more as the local companies are so strong, with such strong balance sheets and access to cheap debt have locked them out.

There will be consequences. The risks that the locals are taking on in Mindanao are not unique and have been faced by IPP's around the world since the '80's. The lack of credit support and ability to pay will result in some projects having serious financial issues in the future. The lack of documentation will mean that nobody will have a clear idea who is liable and how the project should be unravelled when that occurs. And the lack of international lenders will mean that these failures could have a disproportionately large impact on the local banking sector.

Local sponsors

The risks facing projects in places like Mindanao are not significantly different than the risks facing the first IPP's entering Asia; but the mechanisms for dealing with those risks have changed. A lack of sovereign guarantees and non-credit worthy counterparties is not a new phenomenon – it was seen in India following the Dabhol fiasco in the 1990's. Back then a large number of projects failed to complete because of the issues and the same is looking true in Mindanao.

However, where the Government and the lending community will not take the risks, the only place left is the balance sheet of the sponsors. Once difference now from the 1980's and 1990's is the rise of local sponsors who are prepared to take risks, in their own countries, that international players deem unworkable. In doing so they put their own balance sheets on the line and in this regard we are seeing a new type of player in the power market: the large local company taking risks that international power companies will not.

There are no IPP's for conventional plant in China these days – because the Chinese state own enterprises have pushed them out. The SOE's have the advantage of state debt and a much lower need for return. In India, we see Reliance and Tata and others stepping into the gap where international IPP's previously stood. In the Philippines we have Aboitiz and San Miguel as wholly local companies, with others such as GN Power having a small international flavour backing up local expertise.

In Vietnam, Petrovietnam has long been a strong player in power while in Thailand ECGO is even exporting its expertise overseas.

Local companies understand the local culture and do not add a risk premium for "being overseas". Back in the "bad old days" when I was at Powergen, we would add a "risk factor" to all our required rate of return calculations, based on the country in question. There was little science to this risk factor and in many ways it represented more the lack of comfort of doing business in a strange environment as any objective criteria. The USA, for example, had a very low risk factor because "we knew what we were doing there". The truth turned out to be quite the opposite. Local companies do not need this uplift and are thus more competitive.

Local companies are better placed to understand the politics and regulatory drivers of the market and are perhaps better at managing these risks. Where the companies already exist in a related industry (or not, in the case of San Miguel!) they already have relationships with local banks and can gain finance based on these relationships rather than on the strength of project documentation.

Arguably local companies are also more comfortable with their own currencies risk – whether or not just comfort is justified.

Conclusions

There are two conclusions coming from this talk, and the first may be a little depressing for all the international IPP's in the room, because it's that the "international" power producer is no longer such a valued commodity and many countries have now learned how to DIY building power stations. This means that to find opportunities the IPP needs to either find those niches where the constraints of the past still hold; where they can bring a technological advantage that is new to a host community or find ways to "go local".

It is probably no surprise to hear people talking about Myanmar or Ulaanbaatar – places that have the potential for high growth and a need for capital but without (quite yet) the local industry to pick up the baton.

It is clear that concerns for the environment and a push for more renewables is – and has been for some time – the new frontier for the IPP. Projects are smaller but international players still bring expertise, equipment and funding that is necessary in many markets. The MLA's certainly seem to think so, given that this is about all they are prepared to help out these days.

For how much longer this will hold, is an interesting questions and I do not speculate on the answer, save to note that China is now exporting wind and has growing home-grown wind expertise.

The second conclusion is more speculative. We have postulated that IPP's are less needed, and structures are different, because of the greater local sponsors and local lending now seen in many markets, along with the increase in market mechanisms rather than traditional PPA's.

But the underlying risks have not changed. There is still a risk that the technology will not work well; there is still a risks that the cost of fuel will rise or that the cost of competing fuels will fall; there is still a risk that demand will not rise or that the revenues from the market or local contracts will be insufficient to cover costs. And most power stations still cannot move to find a better market once built.

It remains an open question whether the local sponsors and the local financing is solving these risks, or just bearing them and passing them back to shareholders (who may themselves be very unsophisticated).

It remains unclear whether "difficult" projects such as Mindanao will go ahead at all and at what point Governments reach breaking point when "the market" does not deliver and the lights go out for hours, days or weeks at a time.

In the early 1990's in the Philippines, some very lucrative deals were struck when power was desperately needed in short delivery times. Only time will tell if the cycle will repeat and only those who remain close to the game will recognise the signs and be able to profit.

To paraphrase a slogan from my competition entry days: "You have to be in to win."