

THE PUBLIC-PRIVATE PARTNERSHIP IN THE NEW ENERGY ERA

Abstract

The world in which we live in is changing. We got used to cheap and abundant energy resources, we developed a way of life that is based on massive energy consumption and that is about to finish. Our primary energy sources are about to end, and to maintain our development and our comfortable style of living, we need to find new ways of producing energy. There are a lot of alternatives, some of them may sound rather sci-fi, like nuclear fusion, but some are economic viable already, even though still require a large amount of money in order to be profitable. In this case, the only way of doing that investment is by a public-private partnership, especially in less-developed countries.

Keywords: public private partnership, renewable energy, peak energy, PPP energy projects, wind energy.

JEL CODES: M53, N50, O44, P46

PARTENERIATUL PUBLIC- PRIVAT ÎN NOUA ERĂ A ENERGIEI

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Rezumat

Lumea în care trăim este în continuă schimbare. Am fost obișnuiți să utilizăm sursele energetice, care au fost ieftine și în abundență și ne-am dezvoltat un stil de viață bazat pe un consum masiv de energie. Acest lucru este pe cale să se sfârșească. Sursele de energie primară sunt tot mai puține și ca să ne menținem stilul confortabil de viață, trebuie să găsim noi modalități de a produce energie. Există o multitudine de variante pentru a realiza acest lucru, unele dintre ele sună științific, cum ar fi fuziunile nucleare, iar unele sunt deja viabile din punct de vedere economic, cu toate că necesită fonduri considerabile pentru a fi profitabile. În acest caz, singura cale pentru a realiza această investiție, este prin utilizarea unui parteneriat public-privat, mai ales în țările slab dezvoltate.

Cuvinte cheie: parteneriat public privat, energie regenerabilă, vârful producției de energie, proiecte PPP în energie, energie eoliană



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1. INTRODUCTION

Energy is the key of our current developed society. With it we have light, we have comfort, travel or even food. But most of our energy is produced by using fossil fuels, like oil, gas or coal, natural products that are not only limited and non-renewable, but also very pollutant. In recent years there have been a lot more problems due to fossil fuels: pollution, global warming, energetic security, but none managed to make a sense until the prices starting to go up, and only then, the simple person became interested in these problems.

The truth is that you will probably never see cheap energy again. Oil, natural gas and coal are set to peak and go into decline within the next decade, and no technology can change that. Peaking is a simple concept. We generally exploit natural resources in a bell-shaped curve, with the rate of extraction increasing over time until we reach a peak and then gradually slowing down until we stop using them. (Awerbuch, 2004). The peak is usually reached when resources become too difficult to extract, or too expensive, or they are replaced by something cheaper, better or more plentiful. Unfortunately, we have no substitutes for oil that are cheaper or better.

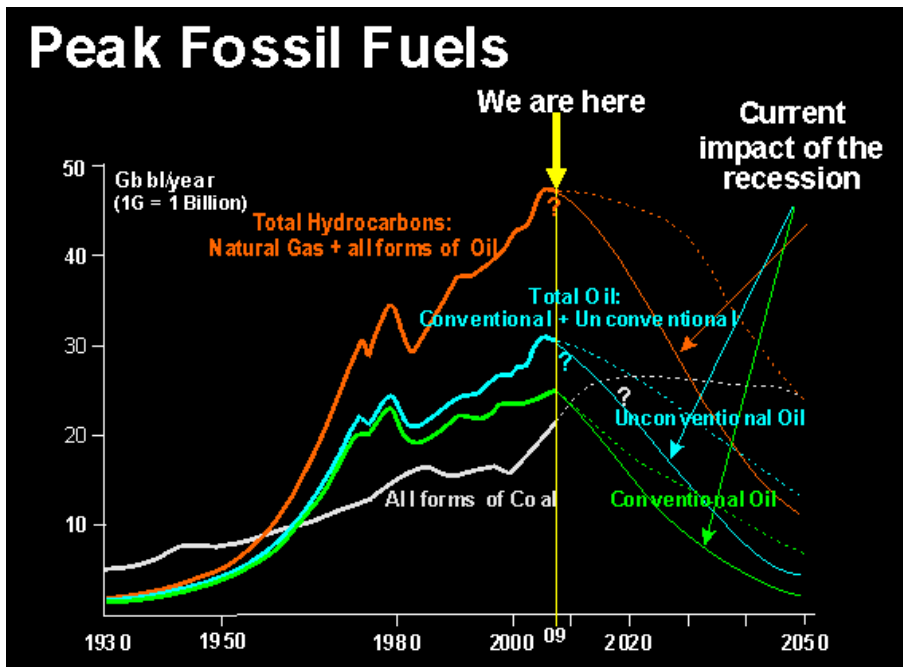


FIGURE 1 - THE MAXIMUM POINT OF FOSSIL FUELS
(Source: Kaho, 2011)

Oil production is expected to go into terminal decline around 2012. The principal reason is that the largest and most productive fields are becoming depleted while new discoveries have been

progressively smaller and of lesser quality. Discovery of new oil peaked over 40 years ago and has been declining ever since despite furious drilling and unprecedentedly high prices. When it begins to decline, rate of crude production is projected to fall at 5%, or over four mbpd, per year--roughly equivalent to losing the entire production of Latin America or Europe every year. The decline rate will likely accelerate to over 10% per year by 2030. (Avato, 2008). The Paris-based International Energy Agency estimates that the world would need to add the equivalent of six new Saudi Arabias by 2030 in order to meet declining production and growing demand. Obviously, there aren't another six Saudi Arabias waiting to be discovered, and unconventional liquid fuels simply cannot fill such a yawning gap.

Natural gas is likewise expected to peak sometime around 2010-2020, and coal around 2020-2030. Oil, natural gas and coal together provide 86% of the world's primary energy. By the end of this century, nearly all of the economically recoverable fossil fuels will be gone (Khan, 2009). From now until then, what remains will be rationed by price.

The coming energy shortage is the most serious crisis the world has ever faced, but it could have a very positive outcome. In theory, the Earth's wind, solar, geothermal and marine resources could each provide more than the total energy the world consumes every day, if we had the ability to harvest them. (Vandamme, 2009). As fossil fuel prices rise, the price of renewably generated electricity will continue to fall. If we are wise and lucky, we will rapidly improve the efficiency of our built environment, deploy renewable capacity and convert to an all-electric infrastructure that runs on it. Fortunately, political momentum is now leaning strongly in this direction.

So, we need to rediscover ourselves, we need to find new ways to live, to drive, to be more efficient and also to convert our economies into green ones. But this is not as simple as it sounds, just because that involves huge quantities of investments, which are not easy to make even for a government. Here steps in the private sector. Together, the public and the private sector can perform a great job, especially in less developed countries, with high economic growth rates (Mina, 2010).

For example, one of the countries that has used public-private partnerships to develop its energy sector, particularly the wind-energy sector, is Spain. In the eighties there was no price design and no defined contract length in the wind-energy sector. This was coupled with high investment subsidy, as much as 50 to 90%, so wind farms were set up only by big corporations who were interested in getting the subsidy. This led to slow growth and the installed capacity reached only about 70 MW. (Dabiri, 2010). Since there was a lack of proper price mechanism, the price-associated risks were also high. Typical profitability during this time was around 20%, mainly due to the high investment subsidy. In the nineties,

the Spanish Government made some changes in the policy, aiming at the price mechanisms and contracts on the guarantee of sale of electricity produced by wind-power.

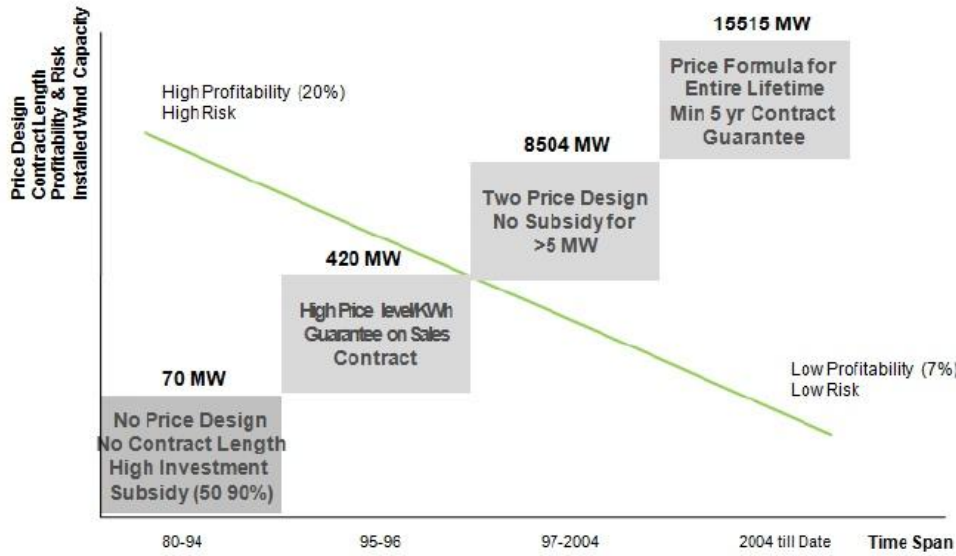


FIGURE 2 - THE EFFICIENCY OF DIFFERENT POLICIES IN WIND ENERGY GENERATION
(Source: Dabiri, 2010)

The price design was single level, mainly higher than the conventional tariff rates. The investment subsidy was reduced in this period and was substituted with the higher tariff structure. This led in a decrease in profitability as well as the risk of the wind power projects undertaken through the PPP route. There was some growth in the installed capacity. It was in 1997 that the Government introduced the two level tariff system. It also eliminated the subsidy for wind-power projects with a capacity over 5 MW, which reduced once again the profitability of large projects. But the two-level price design, which aimed at eliminating this risk during operation of the wind farms, was highly successful and so, the installed capacity rose over 20 times compared to the numbers from the early nineties.

Finally, a uniform price formula for the entire lifetime of a project was adopted in 2004, which further on reduced the risks associated with the setting up of a wind-farm. A minimum contract guarantee of five years was also introduced. Of course, these measures were accompanied by a decrease in profitability once again, which dropped to just 7%, but the installed capacity doubled between 2004 and 2006.

Taking this example from Spain, we can find multiple benefits of a public-private partnership in the energy sector: easy and priority financing, in-time completion avoids further costs, technology transfer from the private technically superior entity, immunity to changing policies or avoids opposition from land owners and environmentalists (Dinică, 2008).

2. CONCLUSION

This was just an example of a successful PPP, but the reality is that we need both the private and the public sector in order to pass in the new energy era. Some say that the fuel of the future will be the hydrogen, that there will be a hydrogen society, similar to our current fossil fuel society, but in order to reach that point there are a lot of money needed to convert the gas-stations, the transport infrastructure or simply to make the technology economically viable. And these investments can't be made by a single entity, especially in less-developed countries. Especially there, we need a public-private partnership, to encourage foreign investment, to import technology and to succeed in our purpose, to become a green society.

REFERENCES

- Avato, P. (2008). *Accelerating clean energy technology research*, The World Bank, Washington 2008.
- Awerbuch, S. (2004). *Determining the real cost: why renewable power is more cost-competitive than previously believed*, New York.
- Dabiri, J.O. (2010). *A new approach to wind energy*, California Institute of Technology. Retrieved from http://dabiri.caltech.edu/publications/FLOWE_PPT_Oct2011.pdf
- Dinică, V. (2008). Initiating a sustained diffusion of wind power: The role of public-private partnerships in Spain. *Energy Policy*, 36 (9). pp. 3562-3571. ISSN 0301-4215
- Kaho, T. (2011). *Hydrogen Vehicles Gaining Momentum*, Need Fueling Infrastructure Strategy Retrieved from <http://www.greencar.com/articles/hydrogen-vehicles-gaining-momentum-need-fueling-infrastructure-strategy.php>
- Khan, M.H. (2009). *The role of public private partnership in renewable energy sector*. Retrieved from http://www.iim.uni-flensburg.de/sesam/upload/Asiana_Alumni/Manohar_PPP.pdf
- Mina, L. (2010). Public-Private Partnerships: A Theoretical Overview, *Management and Public Administration Review*, no. 15, pp. 328-333.
- Vandamme, E. (2009). *Biofuels*, John Wiley&Sons, Chichester.