Renewable energy depends on the public not private sector

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# Preface by David Boys, Public Services International

The privatisation of electricity production, transmission and distribution has been highly problematic wherever it has been attempted, and has depended heavily on public subsidies to ensure private profits. However, the political and ideological forces which support privatisation are determined to keep pushing this model, regardless of the evidence before them.

The next frontier for the market ideologues is in renewables. We are again being sold the advantages of private investment, ownership and management, without being told the amount of public subsidies which they will require.

This brief gives a few examples to illustrate the problems of privatisation as well as the alternatives of public ownership and management. It will be followed by a more comprehensive study to be used at PSI’s global energy meeting in September 2013.

David Boys, Public Services International [www.world-psi.org](http://www.world-psi.org)

# Introduction

Historically, the private sector has played little role in investing in renewable energy generation. Governments have been responsible for nearly all such investments. Current experience from around the world, including the markets of Europe, also shows that private companies and electricity markets cannot deliver investments in renewables on the scale required.

The electricity markets established in Europe have proved unable to create investments in renewable generation. Germany is now relying on the public sector do deliver its ambitious renewables targets. The UK is creating a government agency to decide and finance investment in renewable generation.

The private sector is not a reliable partner: two huge renewable energy projects in Africa have both been abandoned by private investors. Their development now depends on government and public sector investment.

Private sector involvement is not ‘free’ for governments and the public sector: the examples of Vietnam and Indonesia show how World Bank loans worth billions of dollars are used simply to enable the existence of private companies in a market, and how private involvement only responds to long-term power purchase agreements, a system which is notoriously vulnerable to corruption and over-charging.

An active role for government and public sector utilities is thus a far more important condition for developing renewable energy than any expensive system of public subsidies for markets or private investors.

# History: public sector investment in renewables

Historically, investment in low-carbon generation has been driven by government programmes and integrated state-owned companies, not by markets: ““Several countries already source over 70% of their power generation from low-carbon sources. For these, investment has typically only occurred with substantial government intervention, even where markets have subsequently been liberalised”. This is true both for countries where the main source of electricity is hydro – Canada, Venezuela, Brazil, Peru – and in countries where most electricity is generated by nuclear power stations - France, Slovakia and Switzerland. The liberalised Nordic electricity market also has a high level of low-carbon generation, but again most of the investment was made before liberalisation by state-owned utilities. [[1]](#endnote-1)

1. Generation mix in low-carbon electricity systems



Source: UK Committee on Climate Change, 2009. *Meeting Carbon Budgets –the need for a step change. Progress report to Parliament*. P.136-137 <http://www.theccc.org.uk/reports/progress-reports>

# Europe and UK

It is now clear in Europe that climate change measures will mean that an unconstrained market model is not feasible, because the cheapest options, fossil-fuel plant must be discouraged in order for greenhouse gas emission targets to be met.

The carbon trading scheme, the EU ETS, that was meant to provide a market solution to incentivising low-carbon generation sources, has failed badly after 8 years of experience with prices at a small fraction of the real additional cost of reducing carbon emissions. There is little confidence that the scheme can be salvaged.

This failure of the electricity market to invest in renewables has led European governments to rely on the public sector to develop renewable energy. These new policies include the remunicipalisation of energy companies in Germany, and the creation of a new government agency to make centrally administered investment decisions.

## Germany: remunicipalisation

In Germany, there has been a major shift towards direct municipal provision of energy services, especially electricity, since the mid-2000s. Between 2007 and mid-2012, over 60 new local public utilities (stadtwerke) have been set up and more than 190 concessions for energy distribution networks – the great majority being electricity distribution networks - have returned to public hands.

This process is expected to continue and accelerate*.* Almost all existing concessions in the energy sector are up for renewal in the period up to 2016, and about two thirds of all German communes are considering buying back both electricity generators and the distribution networks, including private shareholdings in some of the 850 Stadtwerke. The new and re-municipalised ‘stadtwerke’ are able to operate as supply companies, either buying or generating the mix of electricity they want.

In Germany, there has been heavy criticism of the cost and ineffectiveness of attempts to encourage private investments by market incentives, so that some cities, including Munich, have decided to return to direct municipal production to achieve the desired result.

A key part of the background is the ambitious renewable energy policy objectives of the ‘Energy transformation’ [energiewende]. The share of renewables in electricity is planned to rise from 12% in 2011 to 35% in 2020 and 80% by 2050. In addition, nuclear power will be completely phased out by 2022 – a target originally set by a previous social democrat-green government, but re-affirmed by the current government after the Fukushima disaster, and in the face of significant electoral gains by the Greens. On the demand side, electricity consumption is to be reduced by 25%, and primary energy consumption reduced by 50%, by 2050.

The investment required for renewable energy, the transmission grid, and storage facilities is estimated at over €20billion per year. There is little economic incentive for the private companies to make these investments, and indeed the growing use of renewable electricity undermines the profitability of existing gas-fired power stations. As a result, municipalities and regions have to play a leading role, not only to meet the targets for renewable energy but also to secure sufficient capacity to protect against the effects of markets and the phasing-out of nuclear energy..

The city of Munich, for example, has simply decided that all its energy will come from renewables by 2025, and all of it will be generated by the public sector – because the private sector cannot be relied on. This was powerfully articulated in 2011, by Dieter Reiter, a Munich city councillor, addressing an international conference of economists: [[2]](#endnote-2)

“Energy supply was one of the key sectors affected by privatization of formerly public enterprises. Today, energy supply is characterized by oligopolies of private energy suppliers. There is practically no competition on price. The transition to renewable energies is made rather reluctantly and only as a consequence of massive state subsidies and regulatory requirements .

The example of Munich shows how the transition process can be sped up if a city owns a utility company. By 2025, our utility company aims to produce so much green energy, that the entire demand of the city can be met. That requires enormous investments – around 9 billion euros by 2025 – and can only be successful if the long-term goal is sustainable economic success rather than short-term profit maximization.”

## UK: overriding the market with a single government agency

The UK has in the past led trends to privatisation and liberalisation of electricity, as in other sectors. But the requirement for more renewable energy has led the current government to introduce a new law which will effectively override the market and create a government agency to make investment decisions, and finance them. The reason is a realisation that the market would not deliver the required levels of renewable energy.

The UK regulator, OFGEM stated: ‘The unprecedented combination of the global financial crisis, tough environmental targets, increasing gas import dependency and the closure of ageing power stations has combined to cast reasonable doubt over whether the current energy arrangements will deliver secure and sustainable energy supplies.’ And ‘There is an increasing consensus that leaving the present system of market arrangements and other incentives unchanged is not an option.’ The UK committee on climate change advised that: “we should not accept the significant risks and costs associated with the current market arrangements… changes to the current arrangements are both required and inevitable.”[[3]](#endnote-3)

These statements led to a policy review process that culminated in the publication in November 2012 of a new energy law, the Energy Bill. The main provisions of this bill are that new low-carbon generation plant would be given long-term power purchase agreements that guarantee the volume and price of sales at non-market prices via so-called Contracts for Differences (CfD). As low carbon sources come to dominate the market, the market left for fossil fuels would wither away, and it is likely the prices would be so unreliable that new fossil fuel plants would also need to be given the protection of CfDs.

Contracts would be signed by a government body known as the ‘counterparty body’. All or virtually all wholesale power purchases would be made by this central agency, effectively a single buyer, which would in turn sell the power on to retail suppliers at identical costs.

This model seems to simply override the EU electricity market laws. The first Electricity Directive of 1996 (EC/96/92) allowed a Single Buyer as: ‘responsible for the unified management of the transmission system and/or for centralised electricity purchasing and selling’, but that was withdrawn when the Directive was revised in 2003 under 2003/EC/54, and is no longer an option under EU law.

# Africa: private sector walks away from huge renewable energy projects

The private sector is not a reliable partner for investing in major renewable energy projects. Multinational companies have abandoned the two largest renewable energy projects in Africa, Desertec and Grand Inga. Development of these projects now depends on governments and public sector utilities.

## Desertec

Desertec was an ambitious plan to harness solar energy in the North African deserts to generate electricity. The Desertec Industrial Initiative (Dii) was set up by a group of major multinationals, mostly German, including Siemens, to establish a network of Concentrating Solar Power (CSP) plants in the deserts of Algeria, Morocco and Tunisia, creating 100GW of generating capacity by 2050 at a cost of €400 billion. The plan was to export most of the energy to Europe, to meet 15% of Europe’s energy needs by 2050, using high voltage direct current cables across the Mediterranean Sea. Civil society organisations and unions in north Africa argued that the huge potential for solar energy should rather be developed to meet the energy needs of African countries, and should be subject to democratic control by African countries.

Now the private companies have dropped the initiative. In November 2012 Siemens pulled out, and in May 2013 Dii announced that the whole project was being abandoned. The company admitted that the project’s initial export-focus represented “one-dimensional thinking”, and failed to provide for the growing energy demands in Africa itself. North African governments and public sector utilities are now making their own plans to exploit this great potential source of renewable energy. [[4]](#endnote-4)

## Grand Inga

The Democratic Republic of Congo has some of the largest hydro-generating potential in the world on the Congo river. Two dams are already in operation, with capacity of 1.8GW. Two other projects would provide even greater capacity: the planned Inga III dam could generate 3.5GW capacity, and the Grand Inga dam could generate 39 GW. Grand Inga alone would represent an increase of 40% in the electricity generation capacity of the whole of Africa.

The development of Inga III and Grand Inga was initially planned as an intergovernmental project – ‘Westcor’ - made up of the utility companies of five African countries – Eskom, South Africa; Empresa Nacional de Electrididade in Angola; SNEL in the DRC; NamPower in Namibia; and Botswana Power Corporation in Botswana. The project would develop Inga III and distribute the energy generated to the grids of Angola, Namibia, Botswana and South Africa.

The World Bank, European Investment Bank and African Development Bank would provide the finances for this.

But this was scrapped at the beginning of 2010 in favour of a private sector scheme. WHY? The DRC government announced that it had decided to drop Westcor , and instead agreed that BHP Billiton, a major mining multinational, should develop Inga 3, with its output used for the company’s aluminium smelter in the Bas Congo province. [[5]](#endnote-5)

Two years later, in February 2012, BHP Billiton announced it was abandoning of the project. It pulled out of building the aluminium smelter, because of high construction costs, and was therefore no longer interested in the dam either: "The company has chosen to not continue the [smelter] project following a review of its economics."[[6]](#endnote-6)

Governments and public utilities have therefore had to relaunch plans to develop Inga III and Grand Inga. Under a treaty between South Africa and the DRC, the South African government is providing USD$20billion towards financing the development, and the World Bank and African Development Bank are again expected to contribute. Half of the output will be bought by the South African public sector utility, Eskom, the rest is expected to be sold to the public utilities of other governments. [[7]](#endnote-7)

# Asia

## Vietnam: the public cost of liberalisation

To enable private companies to operate in the sector, large amounts of public money are invested in sectoral reforms, including unbundling public utilities, privatisation, the creation of wholesale and retail markets, changes in pricing policy. Public finance is also required to guarantee long-term payments to private power stations of any kind. The cost of these reforms must be factored in to any contribution made by the private sector to renewables.

For example, in Vietnam, 77% of all World Bank loans to the energy sector (USD $2.181 billion) have been to support sector ‘reform’, rather than investment in generating capacity or extension of the system. The latest loan, Power Sector Reform DPO2, worth $200 million, supports ‘electricity tariff reform, …..development of a competitive power market and subsidy reduction’ . Yet the system created by these loans does not lead to competitive markets: the government and the public utility, EVN, have signed dollar-pegged 20 year power purchase agreements (PPAs) with Electricité de France (EDF), Sumitomo and the Tokyo Electric Power Company, under which EVN is forced to buy in any amount produced at the regularly exchange-rate-adjusted price.

## Indonesia

Indonesia has an energy profile typical of many developing countries. Generation currently depends heavily on oil, coal- and gas-fired power stations, but the system requires extension to achieve universal coverage, and a great expansion in generating capacity to sustain high economic growth rates and social development. The government finances investments and subsidies, and the public utility PLN raises finance internationally, but the only private finance in the system has been through a wave of over-priced IPPs arranged in the 1990s under the corrupt regime of the dictator Suharto.

Indonesia has extensive potential for renewables, not only through wind and solar, but the biggest geo-thermal resources in the world, with a potential of 28GW, but only 1.2GW has been developed. The government created a state-owned company, PT Geo Dipa Energy, to lead development in this sector, and offers various tax reliefs, guarantees, and subsidies, including free data on potential geothermal resources, and grants for exploration which are only repayable if a site is developed loans. Yet a recent review concluded that: “It is difficult to assess the extent to which investment incentives succeed in attracting investment ”, stating that the private sector was still deterred because it is reluctant to observe laws protecting forest areas . The private sector has only responded when the public sector is prepared to sign long-term power purchase agreements , with government-guaranteed prices – using the IPP model which has seen so many problems with corruption and over-charging in the last 30 years.[[8]](#endnote-8)

# Renewables through the public sector

The public sector remains central to the development of renewable energy, for sound political, economic and social reasons.

The development of the energy sector in any country must be determined by transparent, accountable and participatory democratic processes. The public sector itself should be subject to constant challenge and improvement, through the same public and democratic processes.

Public democratic processes ensure that decisions are taken in the interests of the people as a whole. The development of renewable energy should not be based on a framework which privileges private company interests, enforced by the same kind of brutal, undemocratic conditionalities used by development banks in the 1990s to impose privatisation in the sector.

In developing countries, the twin objectives of extension of networks and expansion of renewable energy generation depend overwhelmingly on public finance, as they have done in high income countries in the north. The cost of capital is cheaper for the public sector, and affordability requires subsidies. The myth of ‘leveraging’ private investment has already been exposed in the water sector as an empty promise, and should not be re-used to distort the development of renewable energy.

The public sector provides not only a means of financing investment in renewables, but also a collective resource of knowledge embodied in workers who are securely employed, paid a decent wage, and working in conditions that prioritise safety for both workers and public. It also has the flexibility to develop renewables on a large scale, or support small-scale, decentralised, off-grid local operations.

# Sources

This briefing is based on a number of PSIRU reports on the energy sector, all of which are available on the PSIRU website at [www.psiru.org](http://www.psiru.org) , including in particular:

[Electricity Sector in Vietnam: Is Competition the answer?](http://www.psiru.org/reports/electricity-sector-vietnam-competition-answer) Apr 2013 Steve Thomas, Tue Anh Nguyen

[Overview of energy in Africa](http://www.psiru.org/reports/overview-energy-africa) Jan 2013 Sandra van Niekerk, David Hall

[Re-municipalisation in Europe](http://www.psiru.org/reports/re-municipalisation-europe) Nov 2012 David Hall, Emanuele Lobina, Philip Terhorst

[Who is building renewable generation in W Europe?](http://www.psiru.org/sites/default/files/2011-11-E-renewables.docx) - Nov 2011 Steve Thomas

[The Future of Energy: Are Competitive Markets and Nuclear Power the Answer?](http://www.psiru.org/sites/default/files/2010-02-E-future.pdf) - Feb 2010 Steve Thomas

[Global experience with electricity liberalisation](http://www.psiru.org/sites/default/files/2009-12-E-Indon.doc) - Dec 2009 David Hall, Steve Thomas, Violeta Corral

[Energy Planning in Brazil](http://www.psiru.org/sites/default/files/2009-11-E-Brazilplanning.doc) - Nov 2009Steve Thomas

# Notes

1. UK Committee on Climate Change, 2009. *Meeting Carbon Budgets –the need for a step change. Progress report to Parliament*. P.136-137 <http://www.theccc.org.uk/reports/progress-reports> [↑](#endnote-ref-1)
2. Reiter, Dieter 2011 Welcome address to 10th Munich Economic Summit 19–20 May 2011. P.3 <http://www.cesifo-group.de/DocDL/Forum-3-2011.pdf> [↑](#endnote-ref-2)
3. UK Committee on Climate Change, 2009. *Meeting Carbon Budgets –the need for a step change. Progress report to Parliament*. P.136-137 <http://www.theccc.org.uk/reports/progress-reports> [↑](#endnote-ref-3)
4. Euractiv 31 May 2013 Desertec abandons Sahara solar power export dream <http://www.euractiv.com/energy/desertec-abandons-sahara-solar-p-news-528151> [↑](#endnote-ref-4)
5. The Southern Times (5 March 2010) “Westcor collapses as DRC elbows out regional partners” <http://www.southerntimesafrica.com/article.php?title=Westcor_collapses_as_DRC_elbows_out_regional_partners&id=3771> [↑](#endnote-ref-5)
6. BBC 6 Feb 2012 DR Congo Inga Three Dam: BHP Billiton withdraws custom

   <http://www.bbc.co.uk/news/world-africa-17056918> [↑](#endnote-ref-6)
7. See Sunday Times (South Africa) March 24, 2013 Worry over SA billions in DRC Inga project; CleanTech Blog  
   June 3, 2013 Will Huge New Hydro Projects Bring Power to Africa's People? <http://blog.cleantechies.com/2013/06/03/will-huge-new-hydro-projects-bring-power-to-africa%E2%80%99s-people/> [↑](#endnote-ref-7)
8. See IESR 24 May 2013 Workshop on Financing for the Development of Sustainable Energy in Indonesia <http://www.iesr.or.id/english/2013/05/workshop-on-financing-for-the-development-of-sustainable-energy-in-indonesia/> ; Global Intelligence Alliance June 28, 2012 Geothermal Energy in Indonesia Heating Up <http://www.globalintelligence.com/insights-analysis/bulletins/geothermal-energy-in-indonesia-heating-up>; Wall Street Journal October 23, 2012 Indonesia Seeks Big Jump in Output of Renewable Energy <http://online.wsj.com/article/SB10001424052970203406404578074021845642726.html> ; Harsoprayitno, S., 2009. Geothermal Energy in Indonesia. <http://siteresources.worldbank.org/INTENERGY/Resources/335544-1232567547944/5755469-1239633250635/Sugiharto_Harsoprayitno.pdf>; IISD/TKN Investment Incentives for Renewable Energy: Case study of Indonesia December 2012 <http://www.iisd.org/tkn/pdf/investment_incentives_indonesia.pdf> [↑](#endnote-ref-8)