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# How can Cyprus meet the requirements of the Troika, the EU Electricity Directive, climate change targets while looking after Cypriot consumers?

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## 1. Introduction

The Cyprus electricity industry is currently dominated by the state-owned, vertically integrated semi-government corporation, the Electricity Authority of Cyprus (EAC). In 2015, there were advanced discussions about radical reforms to the structure in the face of external pressures: from the Troika<sup>1</sup> to privatise EAC; and from the European Commission to introduce competition to the electricity industry.

While the terms privatisation, liberalisation and marketization are often used interchangeably, they are quite different processes with entirely different rationales and the proposals put forward are a mixture of all three. Privatisation, that is, change of ownership from public to private, does not require a change in the way the electricity industry functions. The overt rationale for privatisation is usually an assumption that privately-owned companies are always more efficient than publicly-owned companies. Another frequently cited reason is that privatisation will prevent government 'interfering' arbitrarily and destructively with the electricity industry. In practice, there are often other sometimes covert reasons for privatisation, such as generating income for the government or reducing the power of trade unions.

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<sup>1</sup> Troika comprises the European Commission, the European Central Bank & the International Monetary Fund

Liberalisation, that is, breaking the monopoly of the incumbent utilities by allowing new generators into the system, does not necessarily imply any introduction of competition. In the past, liberalisation has allowed small but cost-effective generating sources into the market that might not otherwise have been exploited. For example, in the 1980s, the US PURPA act led to a boom in the utilisation of small co-generation plants owned by companies other than the main utility and also led to the first commercial exploitation of modern wind-power technology.

Marketisation, that is, transforming activities that are deemed not to be natural monopolies into competitive markets, does not require any change of ownership. One of the more successful attempts (albeit with significant issues still) to marketise the electricity industry was in the Nordic countries which were dominated by local and national public ownership. The Nordic reforms took place with minimal change in ownership of the electricity industry.

For this paper, privatisation and marketisation are most relevant as they are the reforms proposed. Liberalisation is only relevant to some of the alternative policies.

## 2. The marketised industry model

The main features of the 'British Model' are as follows:

- Transformation of the electricity generation sector into a competitive market based on the commodities market model;
- Transformation of the retail sector, that is, buying wholesale power and marketing it to consumers including meter reading and billing, into a competitive market so that all consumers are able to choose from a range of different suppliers;
- 'Unbundling' of the network activities, which are regarded as natural monopolies, from the competitive activities so the network is not owned by a generator or a retailer. If a competing generator or retailer owns the network, it is assumed it will tend to give its competitive activities preferential terms accessing the network distorting competition;
- Creation of an 'independent' regulatory body primarily to set prices for monopoly activities and to ensure markets are operating efficiently.

In theory, integration of generation and retail should be discouraged or perhaps banned as is the case in some countries that copied the 'British Model' as the more integrated generation and retail are, the less the wholesale market will be used, making it an unreliable place to buy or sell electricity. In practise, this form of integration is very advantageous to generators as it means that they sell to themselves instead of selling their power into a market where the prices received and the volumes sold should be unpredictable. This makes their business much less risky, albeit to the detriment of competition. It also reduces the risk of poor supply security. If generators are independent, they will be more profitable if there are power shortages than if demand is securely met and so they have an incentive to withhold power and not invest in new capacity. Allowing this form of integration is therefore a 'Faustian bargain' trading security of supply for competition.

## 3. British experience

Britain is generally seen as the pioneer of the competitive electricity industry model,<sup>2</sup> hence the British Model and the example other countries should emulate. However, by 2014 the British electricity industry had fallen into such disrepute with the public, an opinion poll found it was less trusted than British banks, that it was referred to the competition authorities, the Competition and Market Authority (C&MA). The expectation was that the wide-ranging reforms would be recommended. In referring the industry to the C&MA, the British energy regulatory body, OFGEM, found:<sup>3</sup>

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<sup>2</sup> In fact, Chile's experiments with a competitive electricity industry predated those of Britain by nearly a decade  
<sup>3</sup> <https://www.ofgem.gov.uk/press-releases/ofgem-proposes-reference-cma-investigate-energy-market>

- ‘declining consumer confidence with 43 per cent distrusting energy companies to be open and transparent. This may deter consumers from engaging in the market and prevent them from getting a better deal for their energy;
- continuing uncertainty over whether the vertical integration of the large energy companies is in consumers’ interests;
- retail profits increasing from £233 million in 2009 to £1.1 billion in 2012, with no clear evidence of suppliers becoming more efficient in reducing their own costs, although further evidence would be required to determine whether firms have had the opportunity to earn excess profits; and
- suppliers consistently setting higher prices for consumers who have not switched.’

If we look at consumer prices, the extent of the problems become clear. In 2013, Eurostat figures showed that, on a pre-tax basis, only Cyprus, Malta and Spain had higher prices for residential consumers. By 2014, British prices had overtaken even those three countries.

If we look at the situation in the British electricity market, the grounds for these concerns become clear. The wholesale market, even after 25 years of experience, remains chronically illiquid with perhaps only about 2% of wholesale trades going through the visible market. The generation and retail market is dominated by six integrated companies which have a strong incentive to ensure the wholesale market is not reliable, deterring new entrants. The vast majority of power trade is self-dealing with the generation division of the company selling to its retail division at prices known only to itself.

The switching rate amongst residential consumers is much the highest in Europe at about 25% per year. However, the switchers are ‘serial’ switchers with most consumers switching just once in the past 15 years or not at all. There is widespread disillusionment with choice and there is ample research demonstrating that the majority of consumers cannot identify the cheapest deal for themselves. Costs are high with the cost of switching in the order of £70 per switch (comprising a large number of switches that go smoothly and cheaply and a small number that go expensively badly wrong). There is also the fee paid by the company winning the new customer to the price comparison chart companies, perhaps £60 per switch. There is also distrust of the Big 6, all of which have had large fines imposed on them by the regulator for mis-selling, in short, lying to potential new consumers about their prices to persuade them to switch.

Nowhere in the Consultant’s report is this reality of a competitive electricity industry in what is generally regarded as the show-piece for competition reflected.

#### 4. The proposals for Cyprus

For the 25 years since the simultaneous privatisation and marketization of the British electricity industry in 1990, consultants have been advocating reforms that are based on and sometimes copy those implemented in Britain. These proposals are almost invariably based the theoretical benefits of the ‘British Model’ with little if any reference to actual experience.

The consultant’s proposals<sup>4</sup> follow this pattern and are based on a number of assumptions for which no supporting evidence is offered. These include:

- Privately owned companies will invariably be more efficient than publicly owned companies and these benefits will be passed on to consumers in the form of lower prices;
- Competition will invariably be better than a properly regulated monopoly;
- An efficient competitive wholesale electricity market based on the commodities model market can be created;
- The benefits of retail competition outweigh its costs;

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<sup>4</sup> Consultant’s report

- Consumers want to be able to choose their electricity supplier and this choice is one they can effectively use by shopping around to get the best deal.

These assumptions are highly dubious:

- Privatisation. There is no evidence that privately owned electric utilities are more efficient than publicly owned utilities;
- Competition. Experience from EU Member States suggests that competition is hard to implement and may not be sustainable in the sense of providing reliable electricity supplies;
- Wholesale competition. After up to 25 years of attempts to implement competitive wholesale electricity markets, no Member State can claim to have a market that meets the requirements of an efficient market, that is, setting wholesale prices, providing low entry barriers for new entrants and providing reliable and timely price signals to stimulate new investment;
- Costs of competition. It is usually implicitly assumed that competition is a free good. However, for retail competition, the costs are high and are likely to outweigh any benefits of competition. These costs include marketing costs and the cost of switching.<sup>5</sup> The higher the switching rate, the criterion by which the Commission judges the success of retail markets, the higher these costs will be.
- Demand for competition. The Directive asserts: ‘The freedoms which the Treaty guarantees the citizens of the Union — inter alia, the free movement of goods, the freedom of establishment and the freedom to provide services — are achievable only in a fully open market, which enables all consumers freely to choose their suppliers and all suppliers freely to deliver to their customers.’ However, the Commission has never provided evidence that consumers actually want choice rather than being supplied by a properly regulated monopoly.

The proposals need to provide support for the assumptions on which they are based if they are to be credible.

## 5. Must Cyprus comply with the EU Electricity Directive?

There have been three versions of the EU Electricity Directive (96/92/EC, 2003/54/EC and 2009/72/EC) which requires Member States to open their electricity industry to competition creating a ‘Single European Market.’ Successive versions have imposed stricter requirements for wholesale and retail competition, for unbundling of networks and for independent regulatory bodies. As argued below, the main rationale for the Directives was the belief that a wholesale electricity market would be more efficient than a non-competitive arrangement. Without a wholesale market, retail competition would be pointless and there would be no need for unbundling networks. The case for independent regulation is independent of whether or not the electricity industry is organised on a competitive basis.

From a number of perspectives, applying the Directive to relatively small isolated systems like that of Cyprus which has about half a million consumers, a generating capacity of about 1.5GW comprising just two main power plants<sup>6</sup> and a maximum demand of only 800MW makes no sense. These factors include:

- With only two power plants, it is clear a credible field of competing generators would be impossible;
- The size of competing retailers would be subcritical;
- Unbundled network companies would be very small and would lack the financial and technical resources an integrated company offers.

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<sup>5</sup> Individual consumers cannot be charged for switching so the cost of switching is spread across all consumers so consumers that do not switch effectively subsidise those that do switch.

<sup>6</sup> Vasilikos (868MW), Dhekelia (460MW) and Moni (150MW)

The Commission acknowledges some of these problems and the Directives have contained derogations for small isolated systems. The current Directive states (Article 44, para 1):<sup>7</sup>

‘Member States which can demonstrate, after this Directive has been brought into force, that there are substantial problems for the operation of their small isolated systems, may apply for derogations from the relevant provisions of Chapters IV (transmission system operation), VI (distribution system operation), VII (unbundling and transparency of accounts), and VIII (organisation of access to the system), as well as Chapter III, in the case of micro isolated systems, as far as refurbishing, upgrading and expanding existing capacity are concerned, which may be granted to them by the Commission. The Commission shall inform the Member States of those applications before taking a decision, taking into account respect for confidentiality. That decision shall be published in the *Official Journal of the European Union*.’

It is therefore clear that Cyprus qualifies for derogation from some of the requirements of the Directive.

Equally significantly, the Directive has no provisions relating to privatisation. The EU Treaty demands the European Commission be neutral as regards ownership. Ownership of companies is beyond the jurisdiction of the European Union so pressure to privatise would be improper.

## 6. Who would buy the assets?

The assumption by the Troika appears to be that there would be a buyer for the assets which would pay a price for them that reflects their value and which would have the technical credentials to operate the system efficiently. These assumptions do not appear well founded.

Following the implementation of the first Directive in 1998, there was a wave of mergers and takeovers and, ironically for a measure that was supposed to create competition, the European electricity system became dominated by a handful of companies with significant interests outside their home market. These now comprise the two large German companies, E.On and RWE, the two large French companies EDF and ENGIE<sup>8</sup>, and ENEL (Italy). The two French companies and ENEL all have significant stakes held by their national governments. These five companies are all much larger than the next largest internationally based companies (Vattenfall and Iberdrola) and this next tier of companies appears to have little interest in further expanding outside their home markets.

By 2010, the wave of expansion and the poor performance of some of their foreign acquisitions had left the Big 5 companies with unsustainably high levels of debt and to reduce debt all have been selling assets rather than acquiring new ones. EDF has an objective to sell €10bn of assets to pay for construction of a nuclear plant in Britain, E.ON is splitting itself into a ‘good bank’ (renewables and retail) and a ‘bad bank’ (fossil fuel and nuclear generation) to distance itself from losses in traditional businesses. Strategically, their most valuable investments appear to be in markets adjacent to their home markets because of the possibility of trade between national markets. There would appear to be no synergies to their business in buying the Cyprus system which is likely to remain a small isolated system. This therefore begs the question if the large European utilities are not likely to be interested who would prepared to buy, would they be good stewards of this strategically vital industry and would they pay a value that reflected the true value of the assets. Given that demand in Cyprus has been falling since 2010 and by 2013 was about 30% lower than 3 years before, the selling price of the industry would be far below its long-term value.

## 7. Interconnectors

The Commission has a target figure of 10% of total capacity for international interconnections. Given Cyprus’s installed capacity of 1.5GW and a maximum demand of about 800MW, this implies the

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<sup>7</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:211:0055:0093:EN:PDF>

<sup>8</sup> Formerly GDF Suez.

building of a 100MW link to, for example, Turkey or Israel. The Commission is not clear what the function of such links would be. It might contribute to wholesale competition although it seems highly unlikely that what would effectively be a third power plant would be sufficient to allow a competitive wholesale market. Given that any power brought in via an interconnector would have to include the charges for use of the interconnector, it is not clear that such power would be competitive.

Interconnectors might also contribute to security of supply, but interconnectors are expensive and before an interconnector is built to improve security of supply, a cost-benefit analysis should be carried out to show whether an interconnector would be the most cost-effective way of improving security of supply especially given the current over-capacity in the Cyprus system.

## 8. Natural Gas

Natural gas use for power generation has expanded rapidly in Europe following the opening up of markets. The low construction cost, the short construction times make investment in new gas-fired capacity much less risky than, for example, coal-fired plant. Indeed, prior to 1990, new gas-fired generation was illegal in the EU. However, in all countries where gas-use has expanded rapidly, it has been from a base of substantial residential, commercial and industrial direct use of gas. For example, in UK, no gas was used for power generation before 1990 when the industry was privatised and marketised. Within 18 months 15GW of gas capacity, representing about a quarter of total capacity was ordered. However, power station demand for gas was still a small part of overall gas demand and was able to profit from the existing infrastructure and from gas production from UK fields.

A rigorous cost-benefit analysis would be needed to determine whether building the infrastructure bringing gas to Cyprus would require was justified. It seems unlikely there would be a significant demand for gas for use by industry, households and commercial users so demand would be highly seasonal.

## 9. Smart Meters

The Commission requires that 'Smart Meters' are installed with 80% of consumers by 2020, but only if a cost benefit analysis is favourable. In Germany, the economic case was not proven and Germany is not proceeding with smart meters. In UK, the expected cost is about £12bn (€17bn) paid for entirely by consumers or about £500/household spread over the period to 2020. Benefits are estimated as about £18bn over the next 40 years, although more than half of the benefits go to the energy companies. This appears a very bad deal for consumers. Given the poor record of large data systems for the UK electricity industry, this also appears a very risky deal, and, if costs were to overrun significantly, would have a serious effect on consumer prices.

What makes smart meters 'smart' is that they are constantly transmitting consumption data to a central data collection point using the mobile phone network. Their high cost results not from the cost of the meters but from the data transmission and processing. Their rationale is to move consumption from peak times, which are expensive to supply, to periods of lower demand by charging much higher prices at peaks. Given that these peaks are when consumers need power most for their welfare, the social consequences of vulnerable consumers switching off appliances they need for their welfare smart meters should be thought through carefully.

For Cyprus, smart meters appear a low priority and, as a minimum, a thorough cost benefit and risk analysis (financial and social) must be carried out before any commitment to introduce them is taken.

## 10. Climate change

It is arguable whether a competitive electricity market is feasible in the absence of climate change objectives, when generators still have free choice of the generation options. Low carbon sources are generally more expensive than fossil-fuel sources and are often too small-scale (solar PV) to be

attractive to large utilities. The EU Carbon market<sup>9</sup> has failed to produce prices that reflect these extra costs and there is little confidence outside the Commission that this market will become reliable enough and cost-reflective enough to bridge the gap between the price of fossil-fuel sources and low-carbon sources.

This presents a particular problem for electricity systems based on competitive measures at least until low-carbon sources are cheap enough that they will be chosen by the market with no additional incentives. It will require instruments that over-ride the market if new investment in low-carbon sources is to be provided. There are various mechanisms adopted in the EU, for example:

- Feed-in Tariffs (FiT) under which a facility that meets low-carbon specifications receives a long-term commitment to buy the power produced at a pre-determined non-market price
- Long-term power purchase agreements at non-market prices;
- Renewable Obligations under which electricity retailers are required to source a specified (by government) and increasing proportion of their supplies from low-carbon sources;
- Capacity auctions, under which government specifies the amount and type of low-carbon capacity sought and awards long-term power purchase contracts at fixed prices to the lowest bidders.

There is no clear best option and, if well-implemented, it is likely that all of these policies could be effective. In most cases, the most cost-effective option is energy efficiency measures and none of the above measures are well-suited to exploit the huge potential that energy efficiency measures possess. A competitive supply market is equally unlikely to use this potential

However, all measures to reduce greenhouse gas emissions mean that the contestable part of the electricity market will progressively diminish. This will mean that new generators and new retailers will be even less likely to trust the market as a reliable place to sell or buy their power supplies. So, for several decades, at least until low-carbon sources are competitive with fossil-fuel sources, the market is likely to have a diminishing role.

## 11. Conclusions

The proposals to privatise and marketise the Cyprus electricity system are not feasible, would not benefit Cyprus consumers and would be an expensive distraction from more important long-term objectives of transforming the Cyprus electricity system to a sustainable basis whilst still maintaining affordable and reliable supplies

The proposals given to marketise the Cyprus electricity market are based on a model that is not working well in the rest of Europe. It is even less likely to work well in a small isolated electricity system like that of Cyprus. There is no requirement on Cyprus to implement the provisions of the Electricity Directive which allows Member States with small isolated systems to claim derogation from its requirements.

The privatisation proposals would lead to an irreversible break-up of a valuable national resource. Any funds generated from privatising the assets would be small, would not reflect the real long-term value of the assets and might leave the assets in the hands of companies without sufficient commitment to provide reliable, affordable and sustainable electricity supplies.

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<sup>9</sup> European Union Emissions Trading Scheme