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A Third Way for the Electricity Industry

**Some Ideas for Developing
Countries After a Decade of
Liberalisation**

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Liberalisation in developed countries – mixed results

Hopes were high ...

- After privatisation of the UK ESI in 1990, liberalisation became a world-wide trend.
- Motivations differed: developed countries sought customer choice, efficiency, lower costs & prices, government revenue, ...
- Developing countries sought investment to keep up with demand growth, efficiency, reduced bureaucracy & subsidies, ...

... and some came true:

- Competition exerts powerful downward pressure on costs.
- Spectacular improvements in labour and capital productivity were observed in the first years after liberalisation.
- In the UK, generating cost had declined 40% by 1996 and labour productivity had increased 60% .
- In Victoria (Aus), increased plant availability alone added 10% capacity ...

Electricity reform was successful ...

- in some European countries (Sweden, Finland, the Netherlands, Spain),
- in some parts of North America (Pennsylvania-New Jersey-Maryland interconnection),
- even in some threshold countries (Argentina, Chile);
- Finland is building the first nuclear power plant in a competitive market.

but ...

... the pendulum swings back

- California experienced price spikes and 38 days of rolling blackouts between November 2000 and May 2001, PG&E and Calpex went bankrupt.
- Half of US States halted or reversed liberalisation.
- Enron, once 7th largest US corporation and world's largest energy trader, collapsed amidst a major accounting scandal.
- But others have problems, too: American investors have left Europe, British Energy is on the brink of bankruptcy.

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**So what did not
work so well?**

Retail prices are falling ... short of expectations

- Prices did not fall uniformly. There were price reductions of 30% or more in UK, Germany, Australia, Scandinavia.
- But some customer classes experienced significant price increases, due to dismantling of cross subsidies, but also different cost allocation.
- Cost reductions were not fully passed on to consumers. Pre-NETA electricity prices in the UK declined much less than costs; competition benefited principally the suppliers.

Wholesale prices can be high and volatile

- Some spot markets are designed to yield only one market clearing price. This can lead to wholesale price *increases* for some customers.
- Fuel prices (esp. gas) may have a larger effect on prices than competition.
- Demand may not be very price-elastic.
- California (but also UK) shows that a large number of competitors is needed to avoid gaming, which pushes up prices and increases volatility.

Electricity is a risky business ...

- Competition introduces new risks. These must be rewarded to attract investment, especially if the industry is also privatised.
- Returns on investment in the regulated power industry used to be low (5%) – much less than in the oil industry. Oil companies quickly lost interest in the power market ...
- The risk premium needed to attract investment may be large enough to offset most of the efficiency gains.

~~The early bird fat cat~~ gets the worm

- Large industrial customers are profitable clients: high load factor, low service cost, strategic importance.
- Small customers are *much* more expensive to attract, serve, bill ... They will not get the same attention as the large ones.
- The societal benefit of extending competition to all customers may be minimal (UK); the savings may not be worth the bother to small customers.

Conclusions for developed countries

Conclusions 1

- Electricity is complex and competition needs to be « regulated into existence ».
- The expertise, time, money and effort it takes to create a functioning competitive market must not be underestimated.
- It is not enough to dismantle monopoly provisions and let the market get on with it – nothing much will happen (Germany).
- A Strong and independent regulator is vitally important.

Conclusions 2

- No shock therapy - gradual reform is often better.
- It may not be worthwhile to open the market for household customers.
- Long-term contracts must not be ruled out.
- Capacity should be remunerated. A supplier of last resort must be defined and remunerated.
- The demand side must be represented in the spot market.

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**What does this mean
for developing
countries?**

Misunderstanding # 1: All reform lowers prices

- Below-cost pricing and subsidies are wide-spread in developing countries.
- China's power prices contains some 38% subsidy, leading to 21% energy squandering and costing up to 2% of GDP. South Africa's power price subsidy is 20%, costing 1% of GDP and pushing up electricity consumption by 10% .*
- Utilities lack finance, but setting cost-covering prices is resisted by users; poverty aggravates the problem.

Misunderstanding # 2: Privatisation fixes all problems

- Rather, the opposite is true: good management and adequate return on investment attract private investors. Subsequently, privatisation can increase efficiency further.
- Private investment in electricity projects in developing countries went through a « honeymoon phase » between 1991 and 1997, increasing 36-fold.
- The honeymoon is over: by 2001, investment had fallen again to 20% of its 1997 peak.

And things will not improve

- The stock market collapse in 2000 has reduced access to capital. The financial situation of power companies in developed countries has deteriorated. Governments' budgets are tight, too.
- Developing-country power sector investment will have to compete with a significant re-investment cycle in the EU and in other countries e.g. Russia.
- Aging in industrialised and major emerging countries (China, Korea, Mexico ...) will reduce savings rates and contribute to « capital shortage ». Only the best projects will be able to attract investment.

**So things must
change.**

But how?

The Third Way # 1: Improve management

- Utilities should be corporatised (organised as companies under commercial law) and given leeway to act like commercial entities.
- National and local government should refrain from interference in day-to-day operation.
- Accounting should be improved to give a clear picture of the companies' state.
- This reduces political/regulatory and business risk.

The Third Way # 2:

Set realistic prices

- In today's and tomorrow's harsher investment climate, cost-covering electricity tariffs are essential to attract investment.
- Where affordability is a major problem, a « lifeline » tariff can be used: a small, essential amount of electricity (e.g. 1 kWh per family per day) can be subsidised, but all consumption beyond that should be priced at marginal cost.
- The subsidy should *not* be a cross-subsidy.

The Third Way # 3: Create a viable company

- There is a minimum size for a viable power company. In developed countries, the minimum size for an efficient electricity distributor is 3 million customers.
- Smaller firms incur greater risk.
- Vertical and horizontal separation should not be carried out if the company and/or the market are very small.
- Competition can be brought in through IPPs.

The Third Way # 4:

Separate the social activities

- The commercial activities of the company should be kept separate from the social activities.
- « Lifeline » tariffs and rural electrification should not be financed through cross subsidies.
- There should be a separate organisation for rural electrification.

Electricity for All

- 2.1 billion people are without access to electricity, of which 600 million in Africa. Rural electrification is necessary but expensive.
- Universal access to electricity is *the* key factor in poverty alleviation and sustainable development.
- Connecting those without access would require an annual commitment of Euro 7 billion over 25 years.
- Given the importance of electricity for the Millennium Declaration Goals, EDF pushes for a global public-private partnership to provide Electricity for All.

An Example: The W Park Project



Parc
du
W

NIGER

Mare de PÉRÉLÉGOU
Pompe à eau, électrification
poste forestier

BURKINA

Village et dispensaire de
TAPOA DJERMA
Electricité, eau potable,
réfrigération

KARIMAMA

Electricité, eau potable pour
2 dispensaires, un village et
un poste forestier (MONSEY)

BENIN