

Transmission access and losses – conclusions

Summary

- Ofgem has a primary duty to protect customers' interests. One way to achieve this is to protect the security of gas and electricity supplies.
- Transmission and distribution systems are a critical link in the security of supply chain.
- If reforms are not carried out now to the way in which decisions on network investment are based, significant changes in the demand for gas and electricity could put pressure on the future security of electricity supplies.
- Losing electricity as it is transported along the National Grid Company's high voltage transmission system is neither economic nor good for the environment.
- New ways are needed to allocate the cost of these losses between generators and suppliers who pass them on to customers. This will not only ensure a fairer allocation of costs between customers than at present, but it will also actually help reduce losses, which is good for the environment.
- Reforms to the electricity transmission network arrangements have been on the agenda and debated with industry since privatisation. These now need to be completed to secure future electricity supplies, safeguard customers' interests, and help protect the environment.

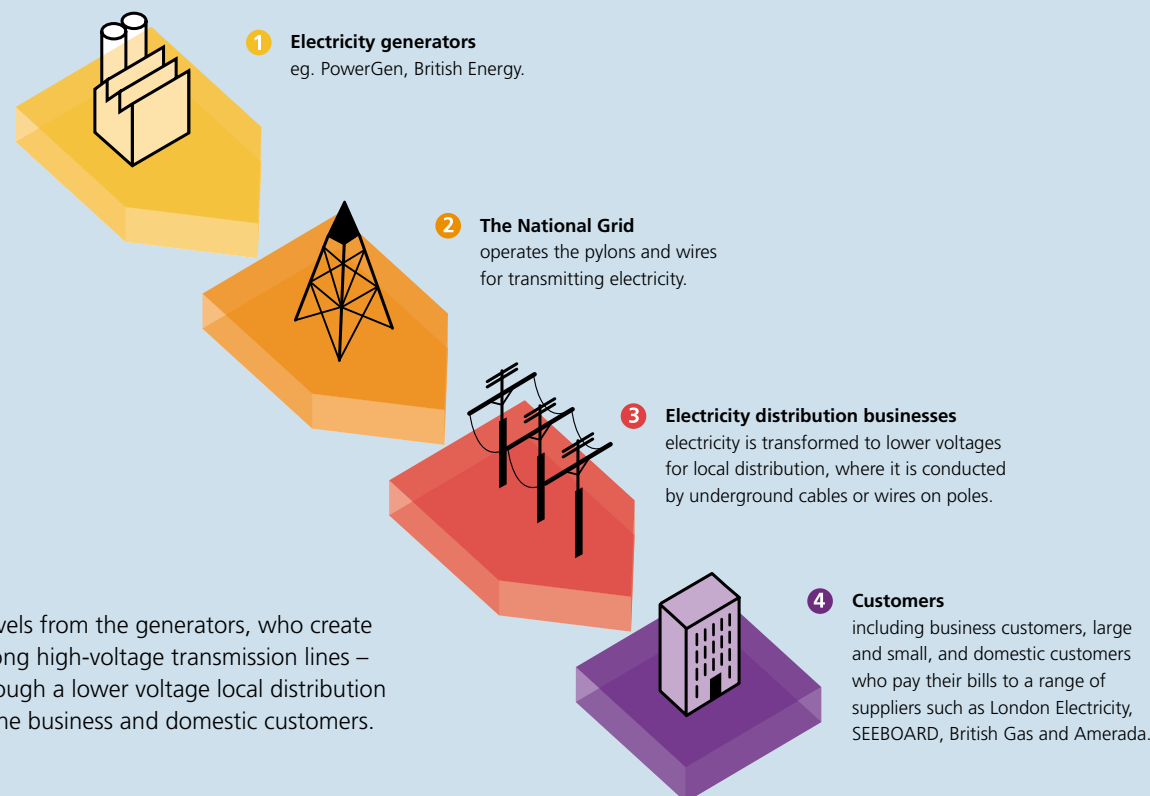
Ofgem's transmission access and losses proposals will mean:

- **for customers** – improved security of supply, lower costs overall as a result of less network congestion and a fairer allocation of the costs of electricity losses between customers in the North and South of England
- **for NGC** – better signals on which to base future investment decisions and improved financial incentives to respond well and efficiently to these signals
- **for generators and suppliers** – for the first time, a right to firm, long-term access to the transmission grid as well as better information on which to base decisions about where to build new generating plant
 - **for smaller generators, such as small wind farms, CHP and solar** – who connect to the distribution system rather than the Grid, the proposals give new incentives for the development of these alternative forms of generation where it is economic to do so.

Background

- Demand for gas has grown dramatically over the past 10 years as a result of the build-up of gas-fired power stations. For example, today nearly 40% of all electricity is produced by gas. There is every sign that these developments will continue at a pace.

Electricity supply



Electricity travels from the generators, who create electricity, along high-voltage transmission lines – and then through a lower voltage local distribution system – to the business and domestic customers.

- Gas and electricity transmission networks are a critical link in the security of supply chain. Reforms have just been completed to the gas transmission arrangements to meet the rapidly changing patterns of supply and demand.
- Changes are now required to the electricity transmission arrangements. The current arrangements are not capable of ensuring that NGC invests in the right place, and at the right time, to safeguard long-term security of supply, as the electricity market becomes more dynamic.
- Under present arrangements, NGC relies on central planning to determine future network investment with all the inefficiencies that this entails. Also, generators can put as much electricity onto the system as they like, whenever and wherever they like. The result of this is that ‘bottlenecks’ occur in the system where there is insufficient capacity to meet demand.
- The risks are financial as well as physical. To ease the supply problems caused by ‘bottlenecks’, NGC has to take action to bring electricity onto the system from elsewhere to meet demand. The costs of this action have to be met by generators and suppliers and, ultimately, customers.
- Most electricity is generated in the north of England. Demand for electricity is greatest in the south of England. Electricity is lost as heat as it travels along the wires. The further it travels, the more electricity is lost. This is neither economic nor good for the environment.
- At present, the costs of losses are spread across all generators and suppliers and, ultimately, customers and are not allocated on the basis of location.
- The effect of this is that customers in the north of England, in effect, cross-subsidise customers in the south of England.

Changing patterns of demand and supply will put increasing pressure on the security of the system if action is not taken now to improve signals for investment decisions in the future.

What do Ofgem’s proposals mean for customers, NGC and generators (large and small)

For customers

- *Improved security of supply, lower costs overall as a result of less network congestion, and, in the long-term, a fairer allocation of the costs of electricity losses between customers in the north and south of England.*

At present, the costs of losses are averaged out across all generators and suppliers. This means that customers in the north of England have to pay some of the costs of transmitting electricity to sites miles away from the source of generation, typically in the south of England.

Under the new arrangements, customers in the south will pay more towards these costs as they live the furthest away from generation based in the north of the country while customers in the north will pay less.

In the long term, the effect of these changes should:

- encourage investment in generation in areas which currently have little or no generation capacity. It should also stimulate the development of small ‘distributed’ wind, CHP or solar generation, bringing benefits to the environment
- in the longer term, encourage the closer location of generation to demand.

This will ultimately bring down the overall costs of transporting electricity to customers, as well as help to reduce losses which are harmful to the environment.

Under the new arrangements, generators situated in the north could pay about £23 million a year more than they do at present. Generators in and around Greater London could pay £11 million a year less.

Customers in the north could initially pay £19 million a year less than they do at present. Customers in and around Greater London could pay £7 million a year more.

For NGC

- *Better information on which to base future investment decisions and improved financial rewards if NGC responds well and efficiently – much like the new arrangements which have been agreed for gas pipeline operator Transco.*

Transco’s new incentives allow it to earn additional returns, above its regulated cost of capital, where it undertakes investments in excess of those included in its price control in response to changing demand for access to the gas transmission system. At exit, the incentives encourage Transco to consider alternatives to pipeline investment (such as interruptible contracts) where it is efficient to do so.

The new regime means that it will be possible to introduce similar incentives for NGC so as to encourage it to invest in areas which have historically suffered from constant ‘bottlenecks’, if it is economic to do so. The incentives will also give NGC greater flexibility not to invest in parts of the system which can cope more easily with greater demand and where no good case can be made for an upgrade.

For generators and suppliers

- *A right to firm, long-term access to the network to transport electricity, as well as better information on which to base decisions about where to build new generating plant.*

Generators and suppliers will also be entitled to compensation, in part or in full, if these rights are not honoured.

- With financially firm rights, generators and suppliers will be able to trade-off the costs they pay for being able to use the system against the level of supply security they receive.
- The trading of these access rights will give rise to market-based signals of the costs of locating plant in different locations.
- Under the May proposals, Ofgem discussed the possibility that these rights could be auctioned to generators and suppliers. After listening to representations, Ofgem has decided not to pursue this proposal but, instead, leave it to the industry and NGC to agree the best way to allocate rights.

- *The allocation of the costs of losses to generators on a fairer basis than at present.*

- This will serve to give generators better information about the implications, in terms of the costs of transmission losses, of siting generation in different parts of the country. They can then use that information as the basis for future planning decisions.

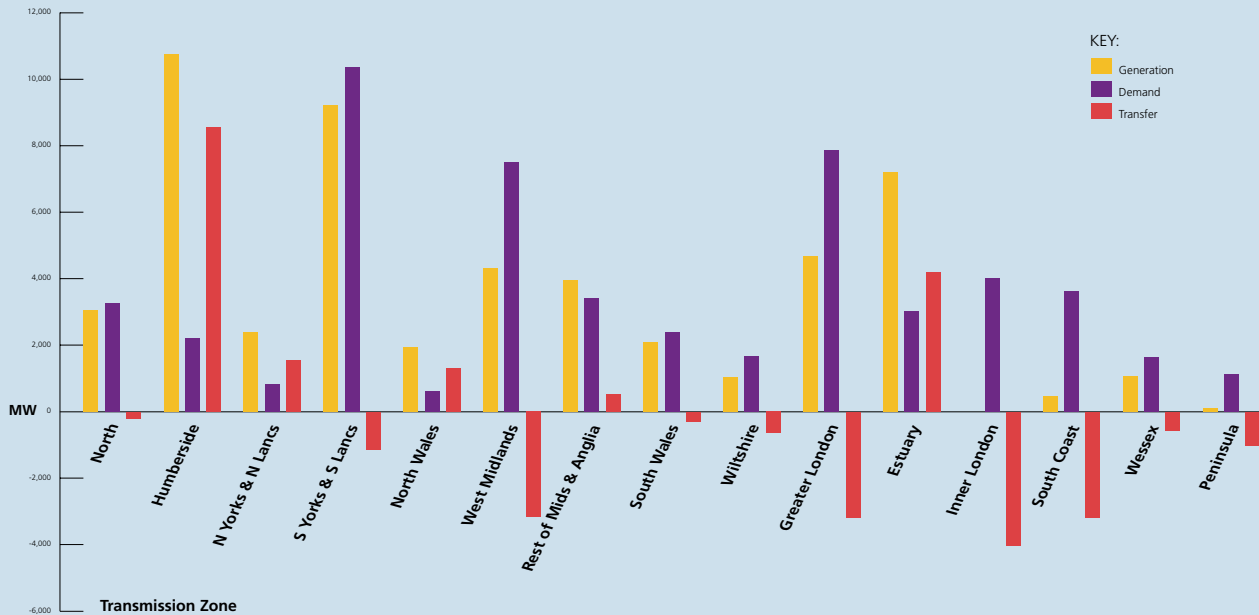
For smaller ‘distributed’ generators

- *New incentives for the development of alternative forms of generation, solar, wind and CHP, where it is economic to do so.*

Smaller ‘distributed’ generators do not connect to NGC’s transmission grid and so do not face losses charges. Generation connected to the distribution system is, by its nature, more closely located to demand and, therefore, will cause fewer losses which is good for the environment. A company which is supplying electricity will be consequently encouraged to contract with distributed generators, since it will reduce their exposure to transmission losses.

Zonal generation, demand and transfer 2001/2

The table shows the demand, generation and transfer in each transmission zone.



How have Ofgem's proposals developed and how will be they be implemented?

In May 2001, Ofgem published initial proposals for new transmission access and losses arrangements.

There has been considerable debate and discussion since then on the best way forward. Ofgem has listened hard to industry and other views and has revised its proposals in light of these.

Ofgem is now proposing a new approach to dealing with these important issues.

The details of the reforms will be for industry and others to take forward and develop. This will be by a variety of means, including using the new governance arrangements for access to the Grid – Connection and Use of System Code (CUSC).

Scotland

These transmission access and losses proposals apply to England and Wales only.

Reforms to the Scottish generation market are underway to create a British-wide Electricity Trading and Transmission Arrangements (BETTA). These reforms will bring more competition to this market, putting greater pressure on customer prices.

They will also create a wider market for traditional and new renewable forms of Scottish electricity generation.

As part of BETTA, new transmission access and losses arrangements will need to be extended to Scotland.