



SCOTTISHPOWER

Smart Grid Investment Challenges

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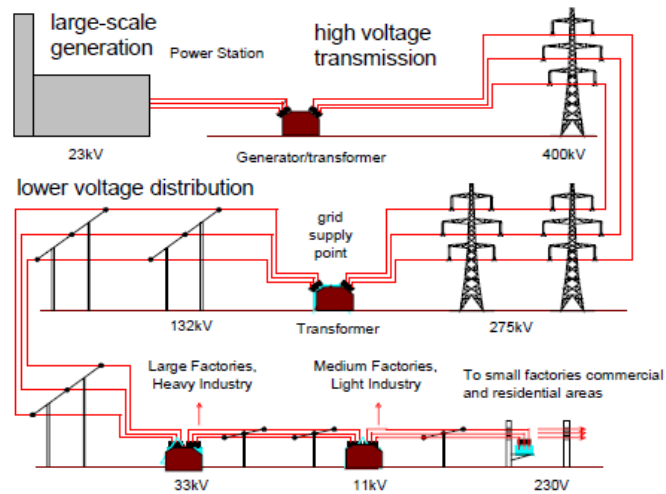
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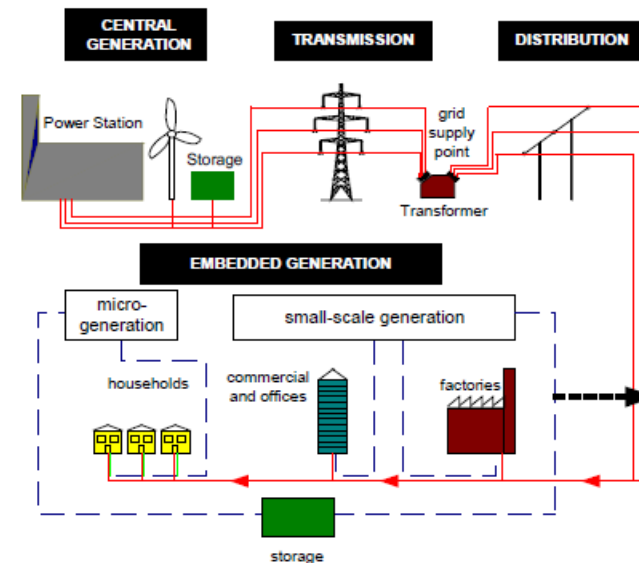
Technology Challenge

Existing Electrical System



- Large scale generation
- One-way transmission with no storage of excess
- High voltage generation to low-voltage consumption

Future Electrical System



- Both large and small scale generation including significant renewables
- Active distribution networks allowing feed back of electricity not used by customers directly connected to small-scale units
- Storage of excess electricity generation

Social & Economic Challenge

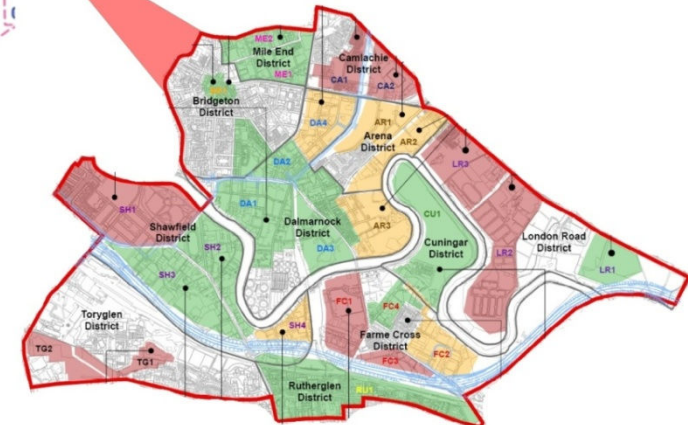
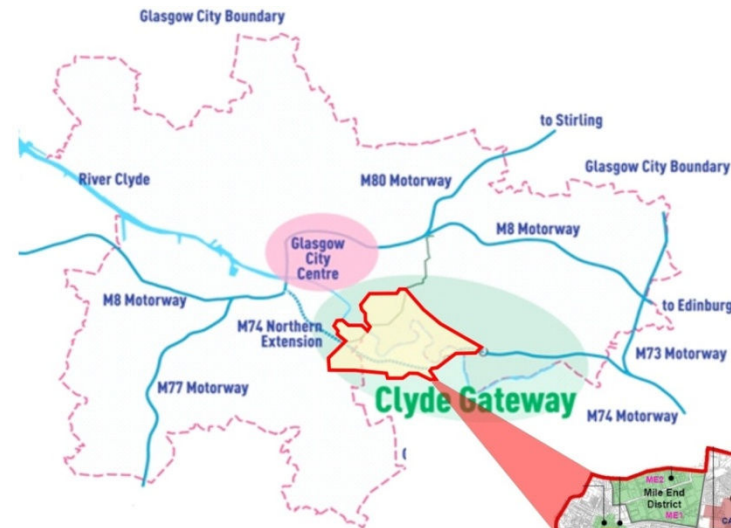
Clyde Gateway covers 2,000 acres in the East End of Glasgow.

Areas include:

Bridgeton, Dalmarnock and Parkhead plus Rutherglen and Shawfield in South Lanarkshire.

Partnership agreement between:

Glasgow City Council, South Lanarkshire Council, Scottish Enterprise and the Scottish Government.



Headlines

- 10,000 new homes
- 400,000 m² of employment space
- 46,000 m² of retail space
- 22,000 new jobs
- £380 million annual income from new employment
- £1.6Bn - £2.0Bn investment
- Increase in GDP from new employment by £477m

Energy & Environmental Challenge



Area		Total Energy Consumption (GWh)	Total CO ₂ Emissions (tonnes)
Clyde Gateway	(2009)	310	90,790
Clyde Gateway	(2015)	373	111,597
Clyde Gateway	(2025)	436	132,404
Clyde Gateway	(2035)	473	145,585
Glasgow City	(2007)	9,757	2,973,333
Scotland	(2007)	88,552	26,586,744
United Kingdom	(2007)	923,764	279,900,180



Bringing it all Together



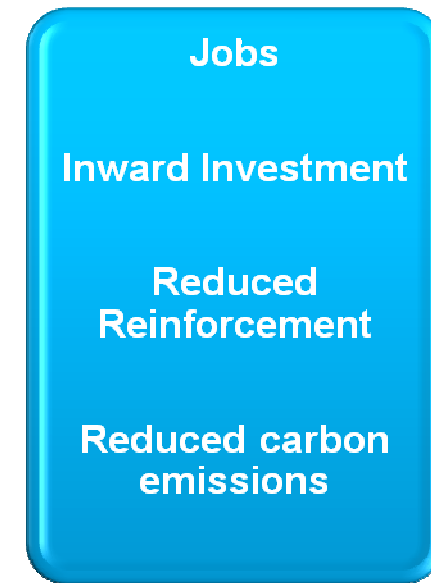
Challenge



Solution



Result



It Can Be Done!

Thank You