



Economics and Financing of UK Offshore Wind

BWEA28, Glasgow, 11th October 2006

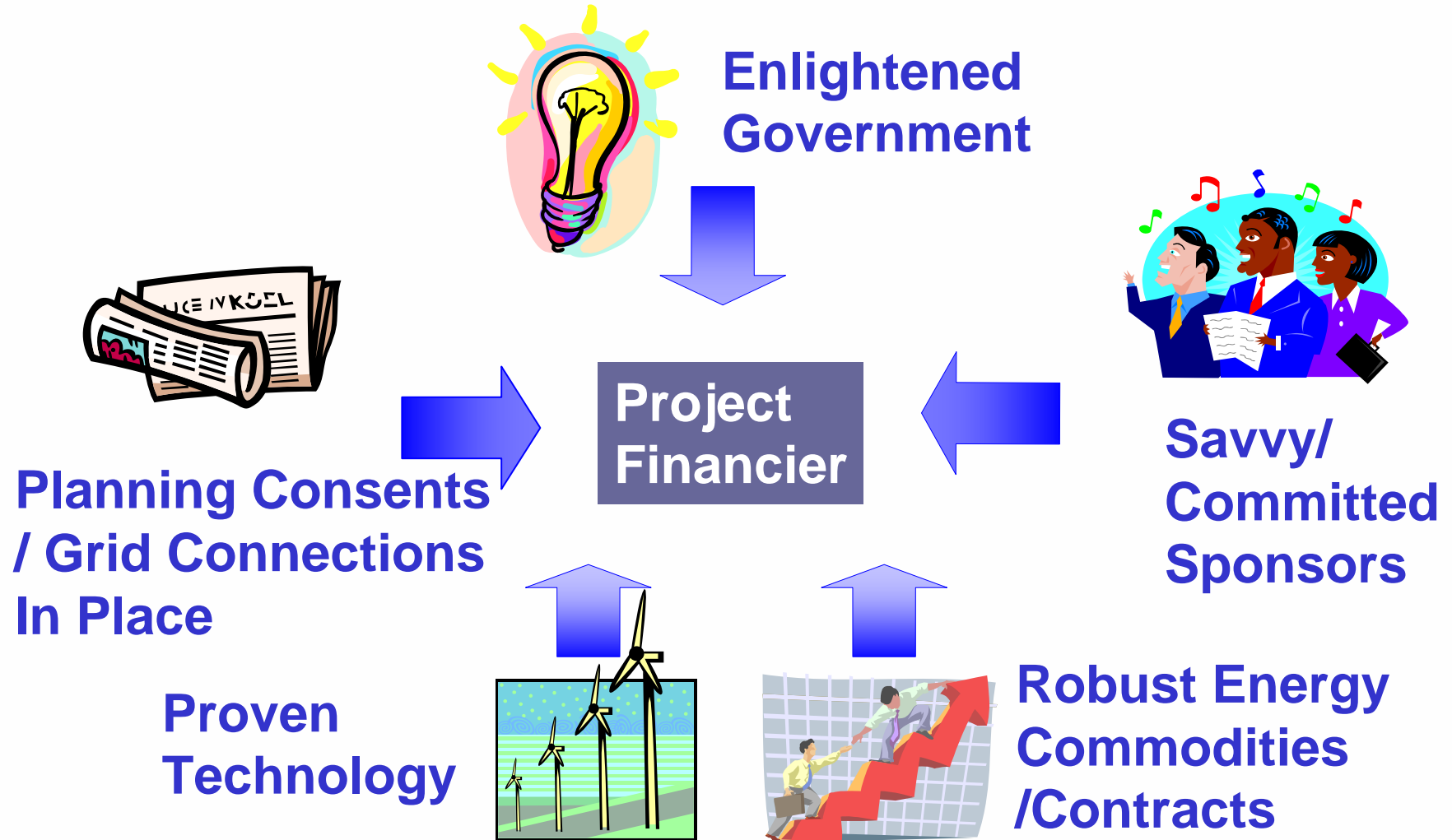
**David Craig
Associate Director, Energy and Utilities**

Bank of Scotland

- **Commercial banking arm of HBOS plc**
- **HBOS plc is one of the largest European banks with a Market Capitalisation of €60 billion**
- **Lead Arranger and participant in the financing of 2,000MW of wind farms in Europe and U.S.**
- **€600 million debt finance underwritten in the Wind Sector**
- **Prior experience in Landfill Gas, Waste-to-Energy and Biomass Projects**
- **HBOS plc uses 300 GWh of electricity p.a. of which 90% is from Renewable Energy**

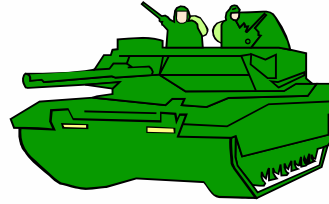
5 Top Considerations

What we want for offshore wind ...

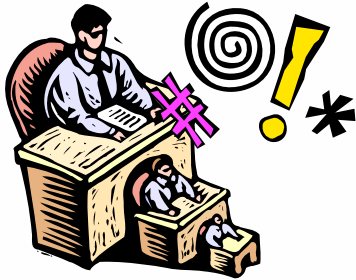


5 Top Considerations

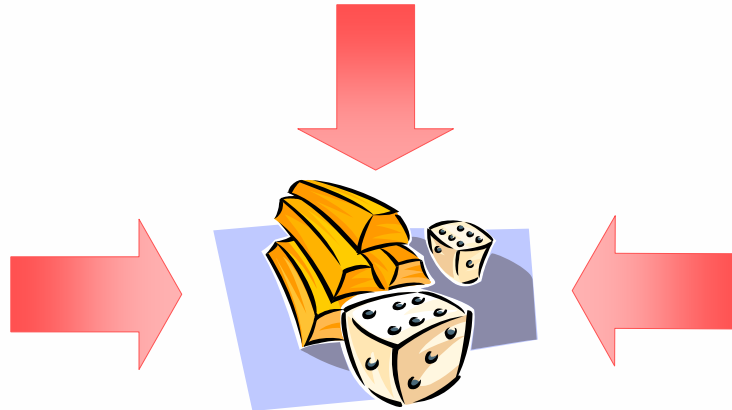
What we can get ...



**Unfriendly
Government
Policies**

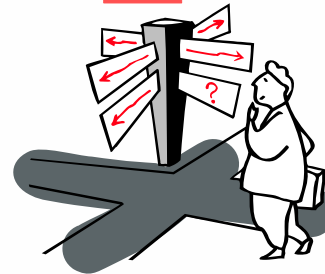
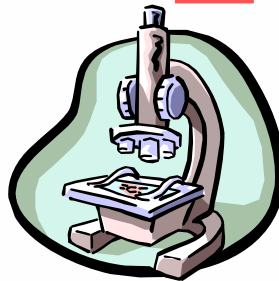


**Complex
Planning
Issues**



**Challenging
Expectations**

**Developing
Technology**



**Uncertain
Commodities**

UK Offshore Sector

- 4.5 years into ROCs
- £100 million of Government Grants
- 4 Offshore Projects built
- £2.0+ billion of capital committed to ROCs based projects

So far the offshore sector has failed to deliver

I Don't Understand?

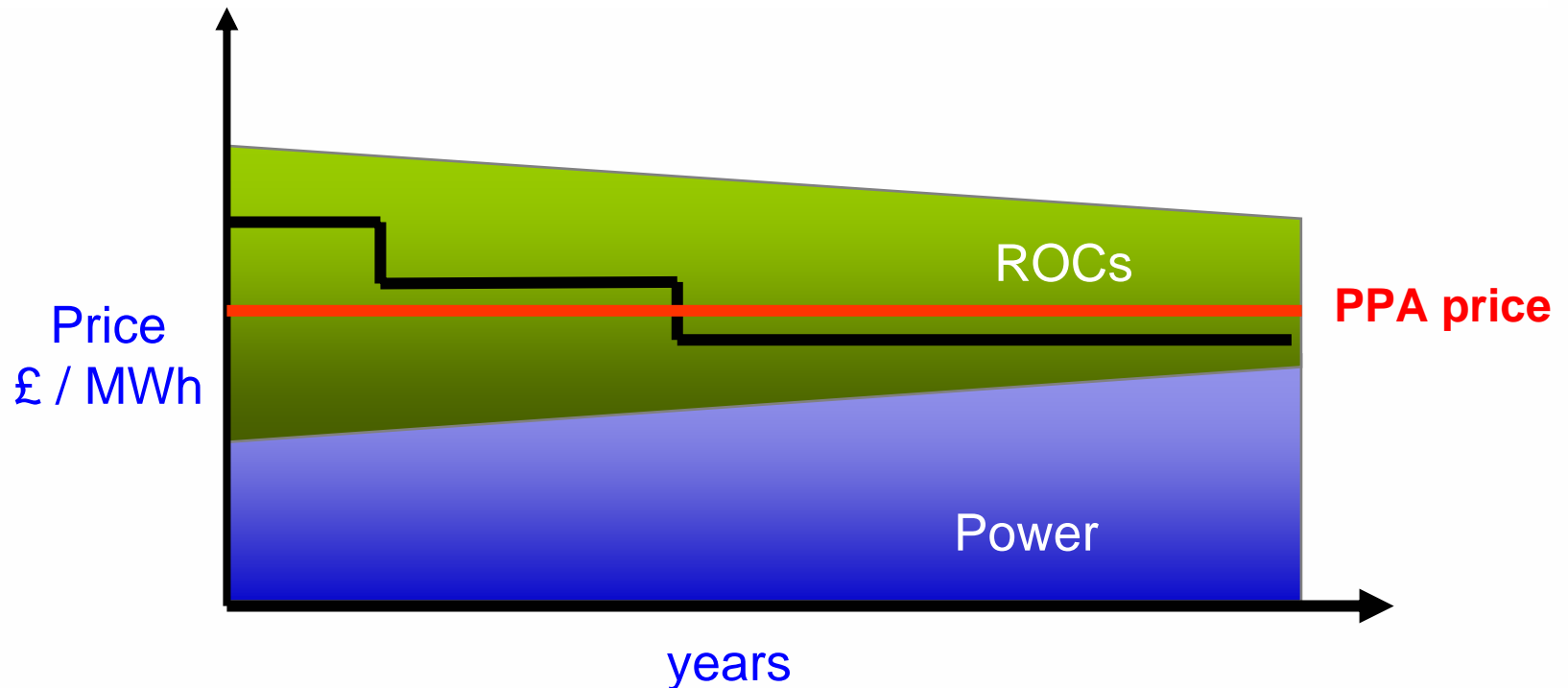
- Denmark 400 MW tariff of £64/MWh
UK 300 MW tariff of £100/MWh
- UK offshore market has underperformed even with:
 - the richest wind resource in Europe
 - an experienced offshore supply industry - North Sea O&G
 - a committed Government
- Why? - the assessment of risk and value.

It is not an issue of the availability of finance.

Off-taker's Assessment

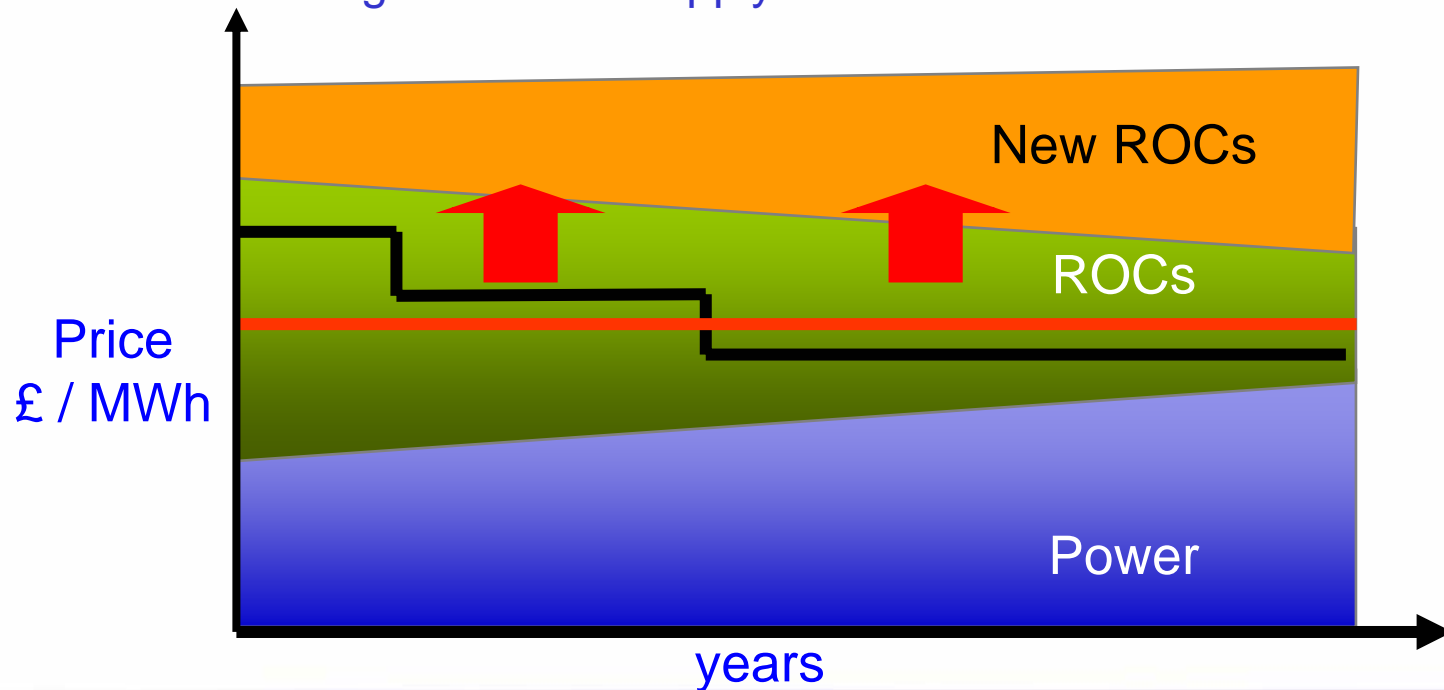
Current situation

- Why do off-takers discount UK Green power?

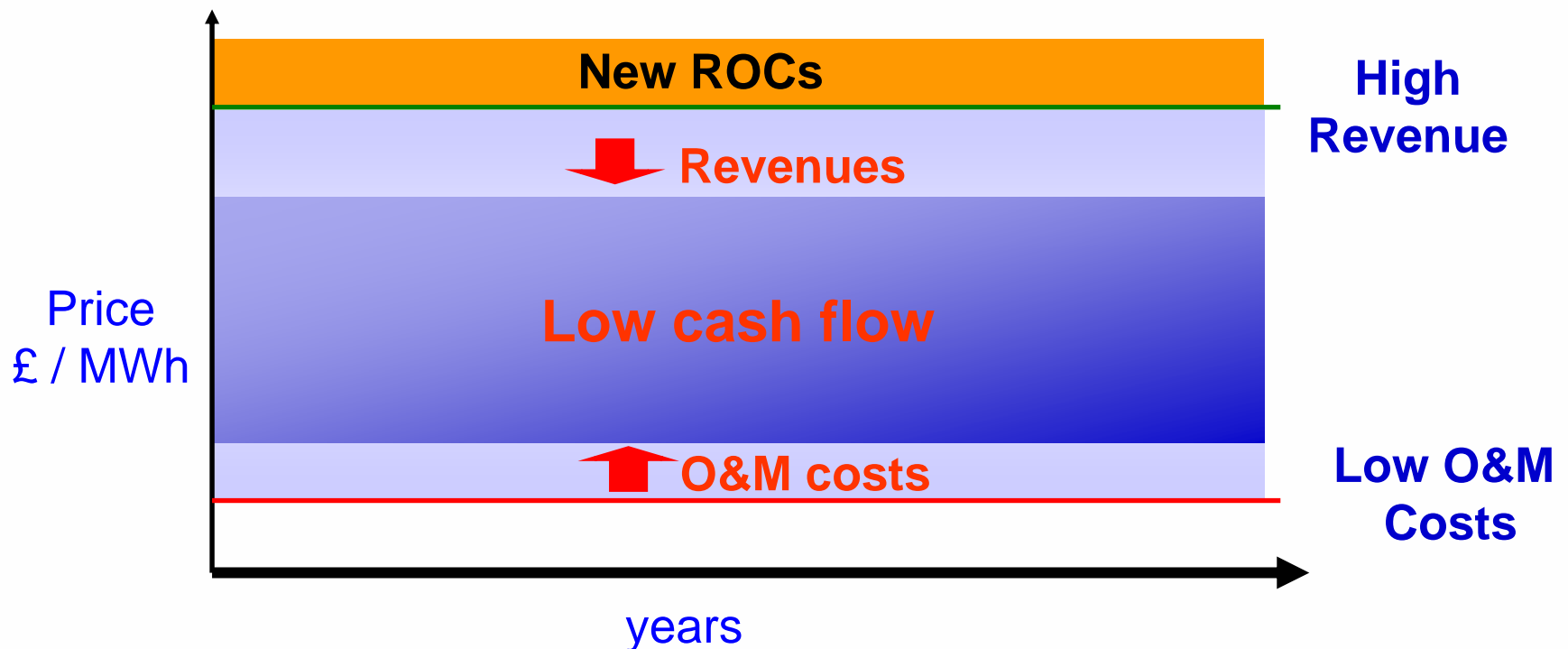


Off-taker's Assessment Post RO Update?

- Additional value in ROCs driven by:
 - New banding system
 - Extension of 20% to 2020
 - Removing risk of oversupply

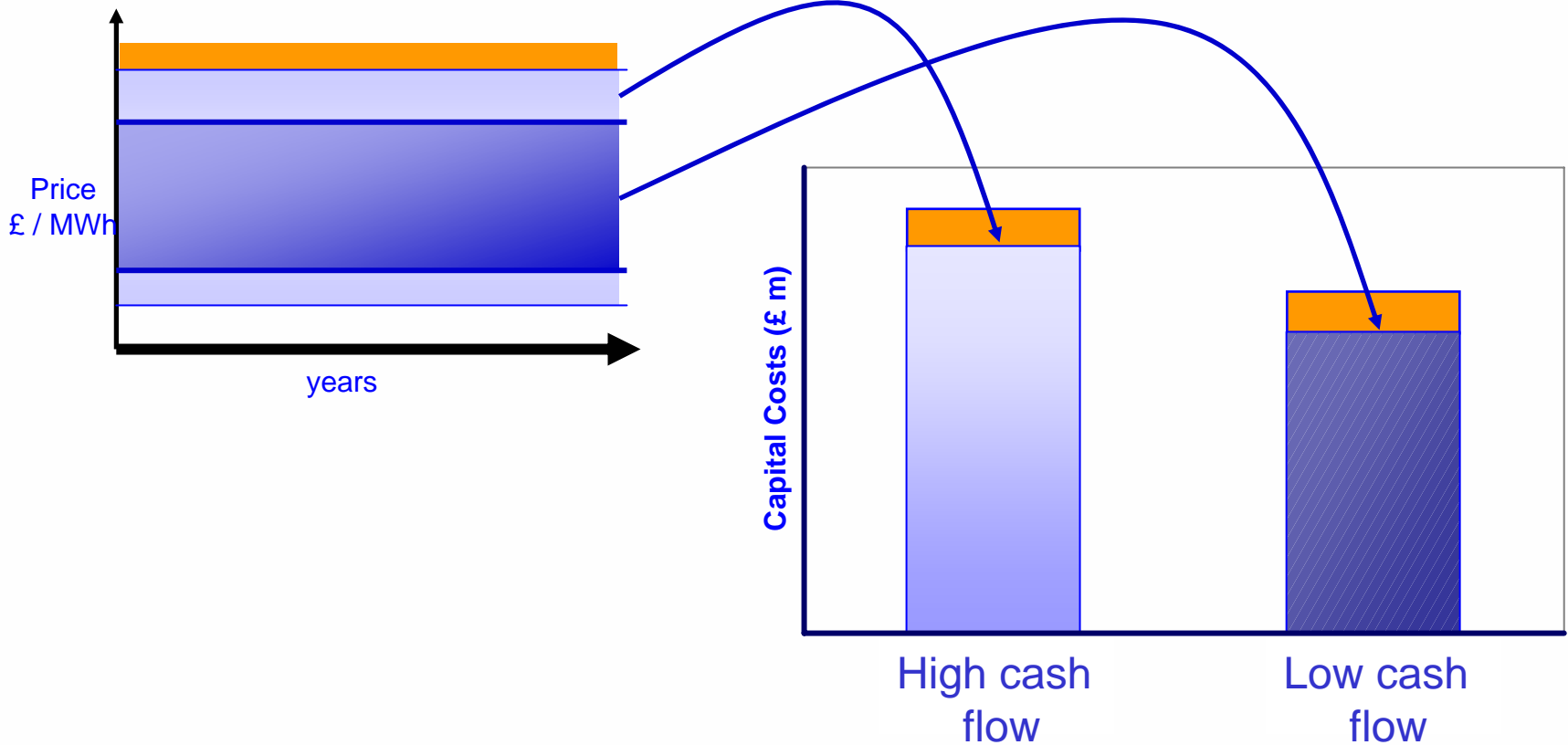


Developer's Assessment



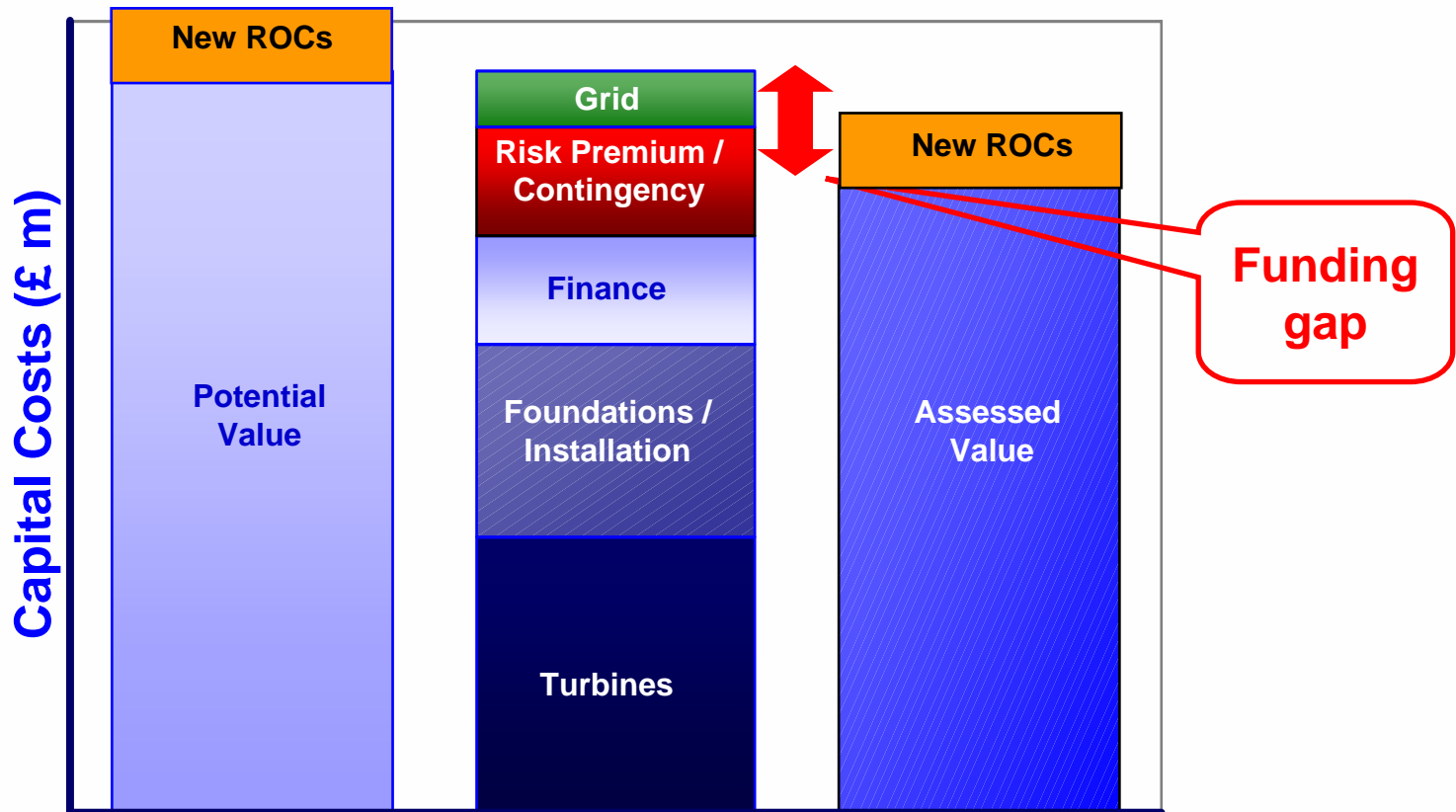
- How much head-room is justified?

Developer's Assessment



- How do we optimise head-room in our forecasts?

Construction Budget



How can we drive down the risk premium?

Driving down the risk premium

- The challenges facing offshore wind:

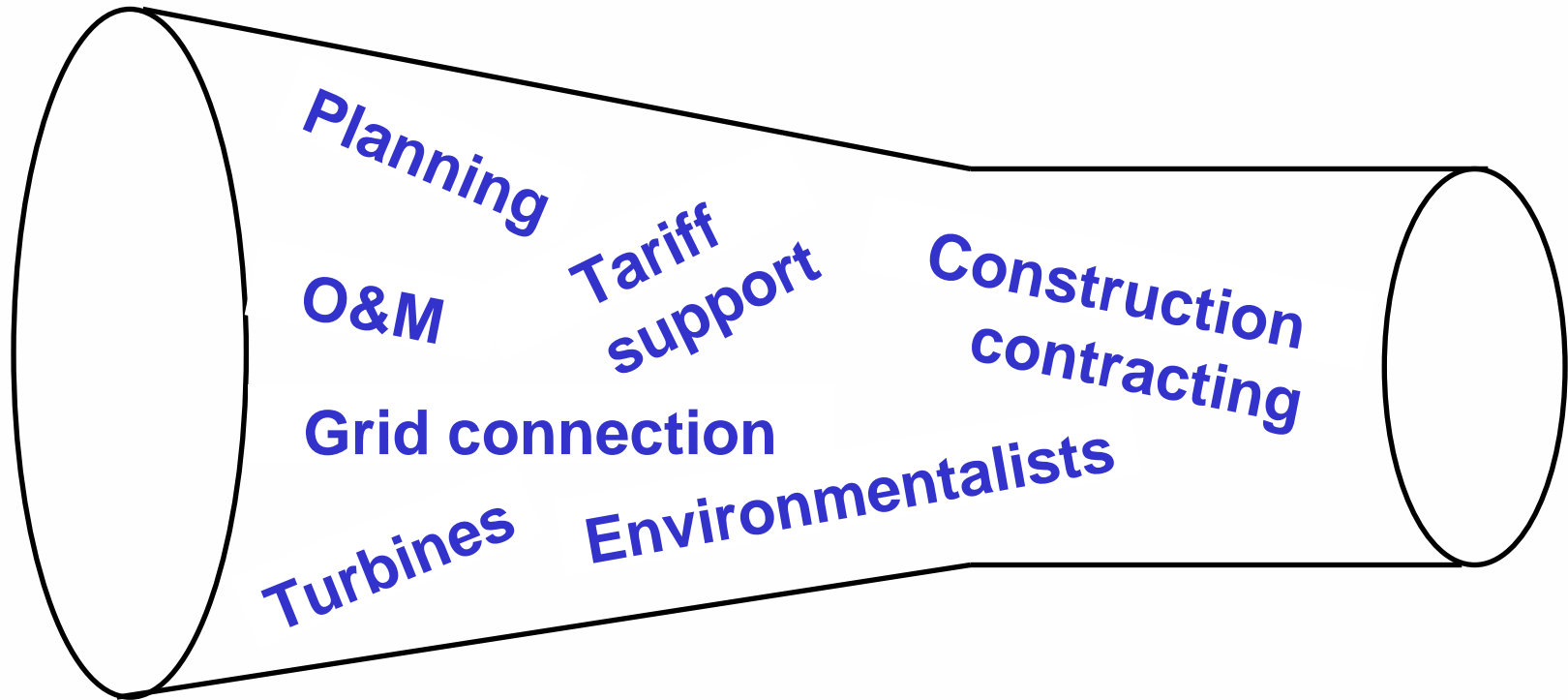
Construction

- Non-availability of turn-key EPC contracts
- Large project size requires significant co-ordination
- Availability – of turbines, cables, specialised vessels & equipment
- Weather risk

Operating risks

- Any interventions more complex and costly
- Planned O&M more costly due to location
- Limited (and mixed) track record to date
- Future costs will be dependent on success of current projects

BUT...UK Offshore Bottleneck



- Do we have a coherent strategy?

Not there yet

Economic Driver	Status
• Government support	✓?
• Planning	~
• Off-take Arrangements / Market Risk	?
• Technology and Construction Risks	?
• Operating Life Cycle	✗

Summary

Bankable Projects Need...	Rationale
<ul style="list-style-type: none">• Supportive regulatory framework	<ul style="list-style-type: none">• Debt tenor and economics
<ul style="list-style-type: none">• Proven technology	<ul style="list-style-type: none">• No unexpected news
<ul style="list-style-type: none">• Planning Consent	<ul style="list-style-type: none">• Avoid uncertainty on capex and project viability
<ul style="list-style-type: none">• Clear analysis of revenue generation	<ul style="list-style-type: none">• Giving certainty
<ul style="list-style-type: none">• A partnership approach	<ul style="list-style-type: none">• Working with sponsors and government to build confidence

...to help us play our part in the future development of offshore wind.

Bank of Scotland



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