

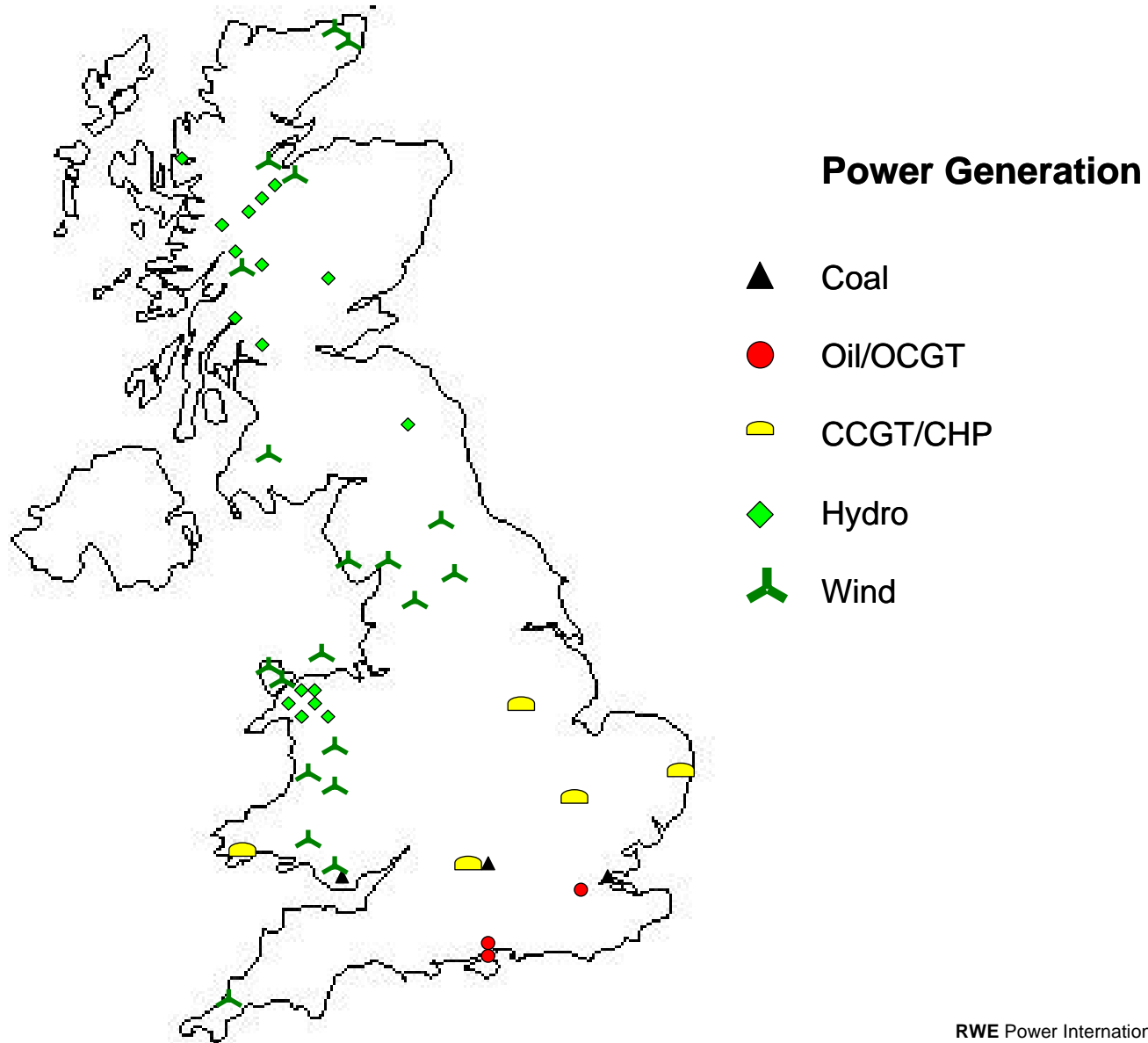
# RWE Power International

## Developing Small-Scale Hydro Opportunities

Keith Blackwood – Senior Manager, European Business Development



# RWE npower - UK Generation Locations



# RWE npower – Support for Hydro Generation

RWE npower Renewables are Installing:

- An average of 2 new small hydro projects per year
- Typical Output 1 to 3 MW
- Mainly Focused on Scotland and North Wales

RWE Power International Provide:

- Support from our TSS Offices in Bellshill
- Owner's Engineer
- Operational Support
- Engineering Consultancy
- Electrical Support
- Testing and Protection Systems

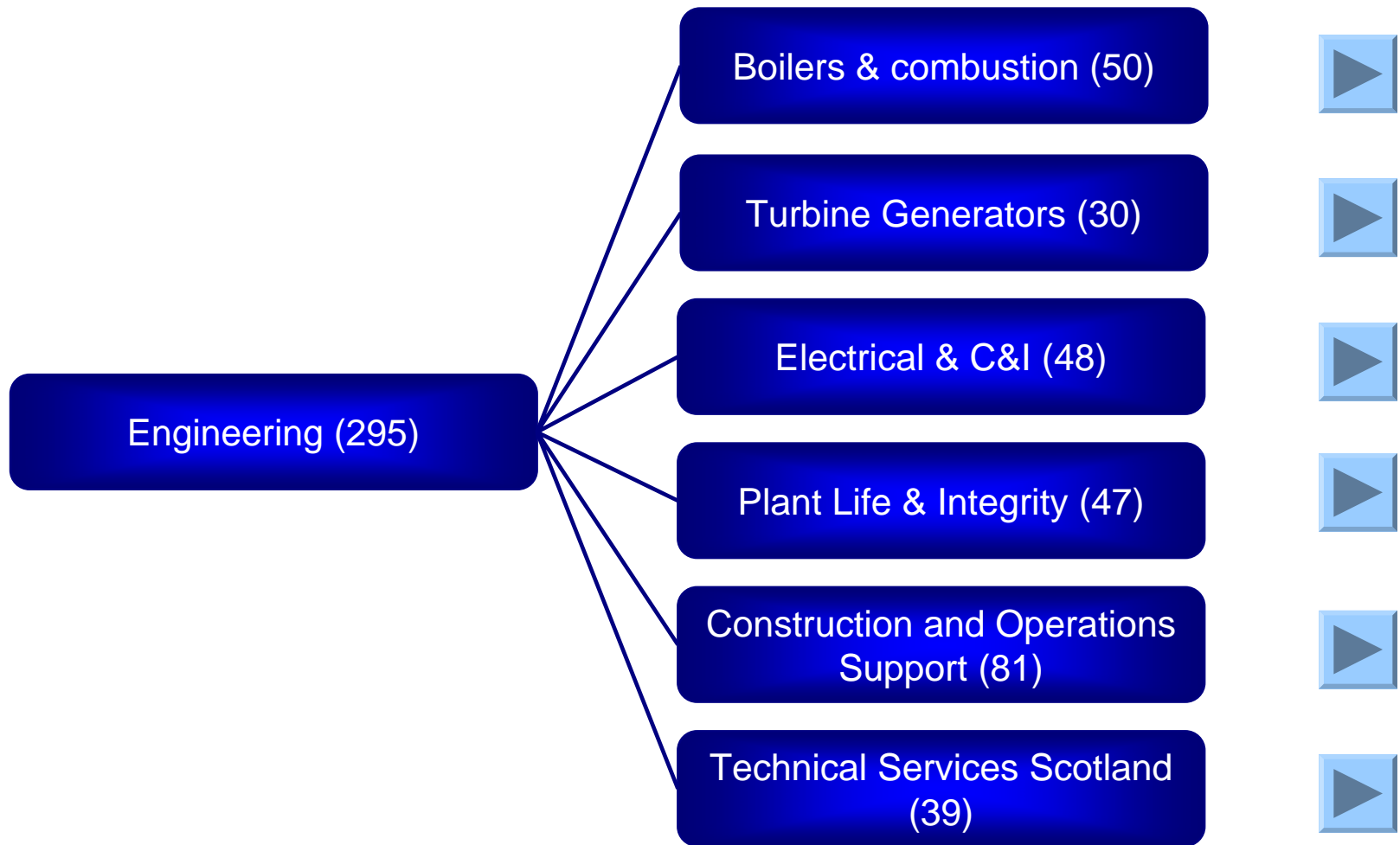


# RWE npower Engineering Competencies

- Fuels and Combustion
- Boiler Engineering
- Turbine Generator Engineering
- Electrical Plant
- Structural Integrity
- Plant Performance
- Inspection Management
- Operational Chemistry
- Civil Engineering
- Metallurgy
- Environmental Controls
- Plant Automation

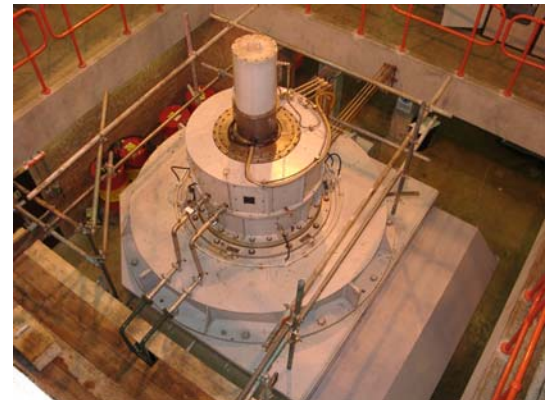
**Competencies are Organised  
into Six Individual Teams**

# RWE npower Engineering



# Recent Projects & Benefits

- Refurbishment of Kielder power station to improve performance and qualify for ROC's:
  - Kielder is located in Northumberland and was built in the 1980's. It operates from a Dam built by Northumbrian Water which is used for Water Supply purposes.
  - RWE npower renewables wanted to refurbish the power station to qualify for Renewable Option Certificates (ROCs) as well as to increase the efficiency of this 6MW plant.
  - RWE Power International were brought in to refurbish the turbines and were also given the responsibility for refurbishing the control system, which involved installing a state of the art system that could be controlled remotely from Dolgarrog power station, North Wales.
  - The efforts of RWE Power International meant that the upgraded plant was successfully handed back to npower renewables operations with greatly improved availability, reliability and facilities for full remote control from Dolgarrog.



# Recent Projects & Benefits

- Commissioning of River E Hydro Scheme:
  - The River E hydro scheme is located within the Corriegarth Estate, approximately 16km north east of Fort Augustus. The 3MW scheme is a run of river scheme, exploiting the water in the River E.
  - Construction of the scheme started in October 2006 and the scheme was commissioned in November 2007.
  - The role of RWE Power International was key in this project
    - Owner's Engineer (Electrical)
    - Preparation of Electrical and Control Systems Specification Documents
    - Preparation of Mechanical Systems Specification Documents
    - Tender Review
    - Review of Documents and Drawings
    - Overview of Construction
    - Supervision of Overall Commissioning



# Summary

- RWE Power International can offer the following services to developers, operators and owners of Hydro Plants
  - Owner's Engineer
  - Operational Support
  - Electrical Systems
  - Testing
  - Protection Systems
  - General Engineering Consultancy

*“Congratulations on reaching the end of your refurbishment programme. I know the task has been more complex and thrown up more issues than we all anticipated. I have been very impressed by the determination and thoroughness of the RWE team”.*

***Andrew Moore, Northumbrian Water***

# RWE Power International

Thank you for your attention.  
I will be pleased to answer  
any of your questions



# RWE Power International – Contact

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