



BENCHMARKING THE COST PERFORMANCE OF THE HYDROPOWER INDUSTRY

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Hydro generation – it’s a very mature business and cost efficiency is moving up on directors’ agenda. Previously, costs were under-prioritised as income dwarfed operating costs and availability significantly impacted revenues.

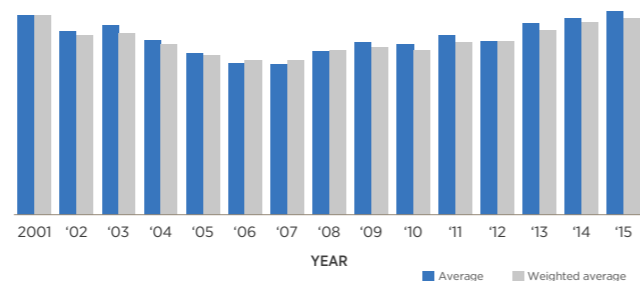
Costs are currently a major focus area due to their impact on safeguarding values and optimising commercial potential. Paradigm changes have changed mindsets in hydro generation – reinforced by low electricity prices in Europe.

Despite the focus on cost efficiency increasing, hydro operators find it challenging to understand their own performance compared to their peers. Best practice performance is obscured due to the unique nature of each hydro operation, which is affected by, among others, various asset types and configurations, income profile and risk, regulation, hydrological factors, climate and more.

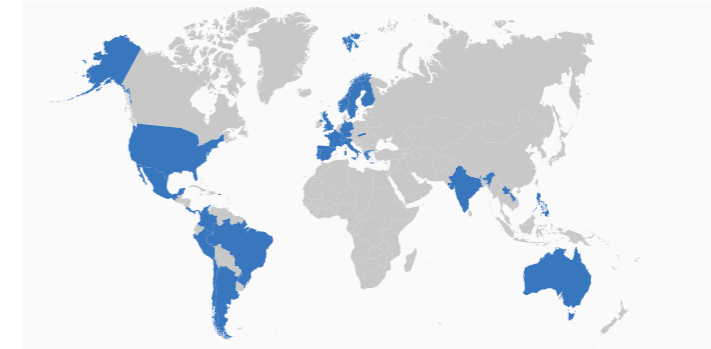
Benchmarking the Norwegian hydro industry for 25 years

We have developed a methodology that allows one-to-one comparison across different power plant portfolios. The approach – what we call the ‘weighted maintenance object’ (WMO) model – is an asset-specific measure that reveals the asset’s underlying cost drivers. WMO is established at power plant level, allowing for a consistent view of the operator’s total assets and their associated costs. This enables a direct comparison of assets and operators regardless of size, type, configuration, geography and other external factors.

HOW COST EFFECTIVENESS HAS DEVELOPED (2001–2015)



THE COUNTRIES COVERED IN OUR HYDROPOWER BENCHMARKING PROGRAMME (2017)



Our benchmark includes more than 80 companies and over 2,500 unique power stations – accounting for more than 110,000 mega volt amperes (MVA) installed capacity. This represents around 10 % of the total installed capacity globally. As you can see from the graph below, that despite focus on costs increasing, the average cost level of participants is increasing – mainly driven by reinvestments. Each year, we host an annual forum where over 25 Norwegian hydro operators meet to discuss performance in the industry.

Creating \$multi-million savings

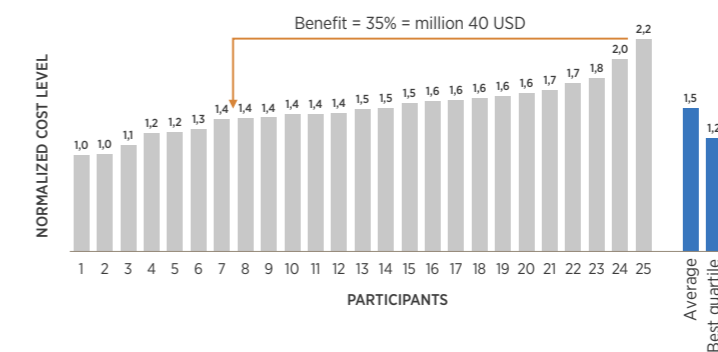
By applying the insights gained from our benchmark, together with our team’s extensive experience in the hydropower sector, we have

helped organisations to save an average of 20% of their total cost base. With one hydropower company, we helped them to cut both operating expenses and capital expenditures costs by 35% during an 18 months period – accounting for \$40 million.

Our work typically includes:

- establishing a baseline of the organisation’s current performance (based on the WMO model)
- developing a realistic change ambition
- creating a portfolio of change initiatives
- supporting to implement these change initiatives through effective programme management.

COST EFFECTIVENESS PER COMPANY



The figure illustrates the shift in a company’s performance. In a period of 18 months, the benchmark participant managed to reduce its cost by 35%, equivalent to \$40 million. From being among the worst performers compared to relevant peers, the company reached top 30% within only 18 months.

The benchmark method has been developed, tested and improved over many years, and has successfully been applied for improving operational efficiency.

To find out more information about our benchmarking program please contact:

Lars Erik Maurud
 PA Energy Expert
 Tel: +47 901 39 501
lars-erik.maurud@paconsulting.com



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Corporate headquarters

123 Buckingham Palace Road
London SW1W 9SR
United Kingdom
+44 20 7730 9000

paconsulting.com

Norway
Verkstedveien 1
PB 150 Skøyen
0212 Oslo

For more information about PA in Norway, please visit www.paconsulting.no

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