Hydro Benchmarking in EUCG

The Hydroelectric Productivity Committee
EUCG’s Hydroelectric Productivity Committee (HPC) is a low-cost, member-driven forum for cost and performance benchmarking and practices sharing.

Comprised of ten utility members from throughout North America.

Objectives of the HPC are:
- to maintain and improve a database that allows for comparative analysis of cost and performance information;
- to build and maintain membership and database participation; and,
- to provide effective products, including:
  - a database;
  - practices sharing; and,
  - peer exchange symposiums.

Membership benefits include:
- Annual cost and performance reports
- Web based access to database for standard and custom report
- Staffing and safety survey reports
- Ad hoc surveys based on member needs
- Networking opportunities at EUCG workshops
HPC Database

- **Plant profile**
  - 230 hydro stations (including pumped storage)
  - Plants range in size from 350 kW to over 6,000 MW
  - Single unit plants to 27 units per facility

- **Cost and performance data collected and analyzed annually**

- **Web-accessible for uploading data and downloading blinded data and standard analytical reports**

- **Designed and managed by an independent third party contractor with functionality defined by the HPC**

- **Benefits include:**
  - Low cost service
  - Centrally controlled functions, including database integrity, data quality monitoring, and data security
  - User-friendly interface
  - Direct data input by users, reducing time and expense of data management
  - Faster turn around time. Essentially, once data is in the system, analysis and reporting can commence.
  - Increased flexibility for off-line customized analysis by HPC members
Distribution of Plant Sizes

- **n = 231**

<table>
<thead>
<tr>
<th>Plant Capacity</th>
<th>Number of Plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 30 MW</td>
<td>90</td>
</tr>
<tr>
<td>31 - 90 MW</td>
<td>80</td>
</tr>
<tr>
<td>91 - 150 MW</td>
<td>40</td>
</tr>
<tr>
<td>151 - 190 MW</td>
<td>20</td>
</tr>
<tr>
<td>&gt; 191 MW</td>
<td>60</td>
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</tbody>
</table>
**Maintenance Costs in $/MWh**

- **Plant Code**
- **Total Maintenance Dollars/Net Generation**
Customized Analysis

Operation vs Plant Size

Operation Costs vs Plant Size in MWs

- Peer Group
- Utility XXX
Identifying Cost and Performance Leaders

Availability vs Operations & Powerhouse Maintenance

Peer Group Ave

Operations & Powerhouse Maintenance Expense, $/Installed Kilowatt

Good

Indicator of good practices

Peer Group
Peer Group Ave
Leading Performers
Other HPC Products

- **Practices Sharing**
  - During EUCG semi-annual meetings, HPC members discuss practices that drive database results
  - Audience is primarily program managers

- **Hydro Management Symposium**
  - In addition to EUCG meetings, the HPC sponsors workshops for peer exchange of operations and maintenance practices
  - Also uses database results to inform discussions
  - Content is more technical in nature
  - Audience is primarily generation managers and plant personnel
  - Held every year or two
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