

Cruachan: Proposed Upgrade of Units 3 & 4

Welcome

Drax is pleased to share the plans to replace and upgrade Units 3 & 4 at Cruachan Power Station ('The Hollow Mountain'). Drax is committed to enabling a zero carbon, lower cost energy future through engineering and innovation, and believe that these proposals present an opportunity to improve generation efficiency and increase power output with minimal impact on the environment and local communities.

Cruachan Power Station

Cruachan Power station opened in 1965, and was acquired by Drax in 2018. It is one of only four pumped storage hydro stations in the UK and currently has a capacity of 440MW – enough to power almost 500,000 homes.

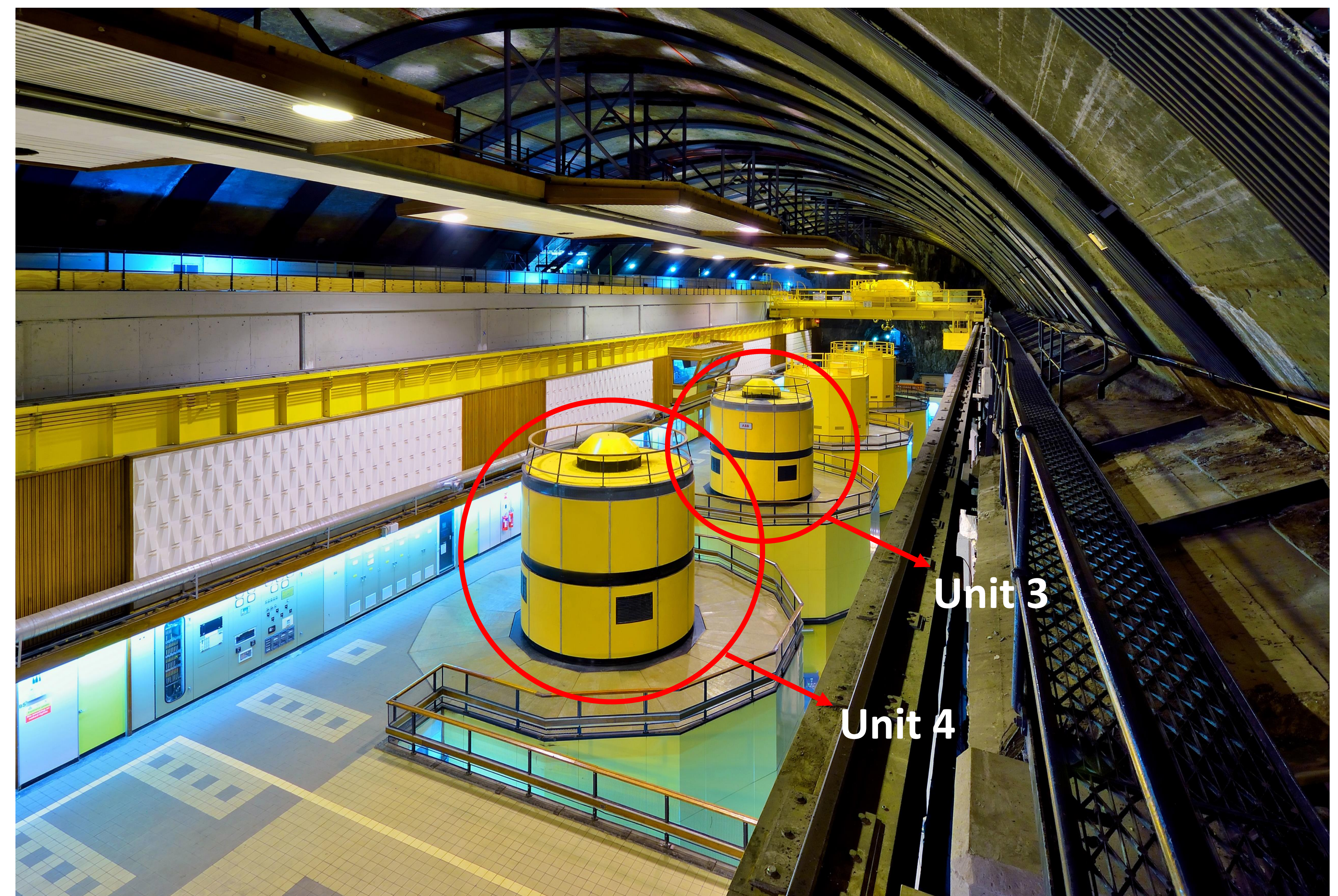
Project Background & Rationale

The original Cruachan Units were designed and constructed during the 1960s, and whilst some equipment has been replaced over the intervening years, other components are reaching the end of their operational lifespan.

Following an assessment of current operations at Cruachan, Drax has identified potential to improve operational efficiency of Units 3 & 4; the power output can be increased by 20%.

Replacing Units 3 & 4 will:

- increase power output.
- help ensure environmental improvements and other associated operational benefits.
- enable other renewable generation to connect to the electrical network.
- have limited visual change to the appearance of the Units within the machine hall, as existing plant housing will be retained.



Cruachan Power Station Machine Hall

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Works Required

The work includes the complete replacement of the generator, turbine impellor and other turbine components. All embedded parts of the Units will remain in situ but will be validated for future operation.

The work will require approximately 50 additional people on site at peak times during the assembly of the new Units.

The new Units will arrive in parts via the main access tunnel and will be assembled underground. All construction equipment required for the new Units and parts removed from the old Units will be transported out of the power station using the main access tunnel.

Impact on the Existing Cruachan Operation

During the build process Unit 3 and Unit 4 will have separate outage periods. Each outage will be for approximately 6 months, with Unit 3 out of service in 2026 and Unit 4 in 2027. Exact outage periods will be agreed with the appointed contractor.

Project Stages

- Environmental Impact Assessment (EIA) Screening Request submitted to Scottish Ministers in June 2022 with a response expected by October 2022. This will determine the supporting studies and information required to be submitted with the Section 36 Application. The application will then be prepared and submitted towards the end of 2022.
- Drax are in the process of tendering the design and construction work. Feedback from prospective contractors is due around December 2022.
- Design work for the new turbine impellor will take around 12-months, including construction and testing (using a scale model of the turbine).
- It is expected that manufacturing the turbine impellor will take around 24-months.
- The works will take place during 2026 and 2027.

Operational Lifespan

The upgraded Units will be designed to last for a 40-year period. At the end of this period, there will be some original parts that have reached 100-years of operational service – a testament to the original design and an ongoing schedule of maintenance.



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Impacts

As a proposal to replace existing plant in-situ, impacts will be limited. The application will address the following topics:

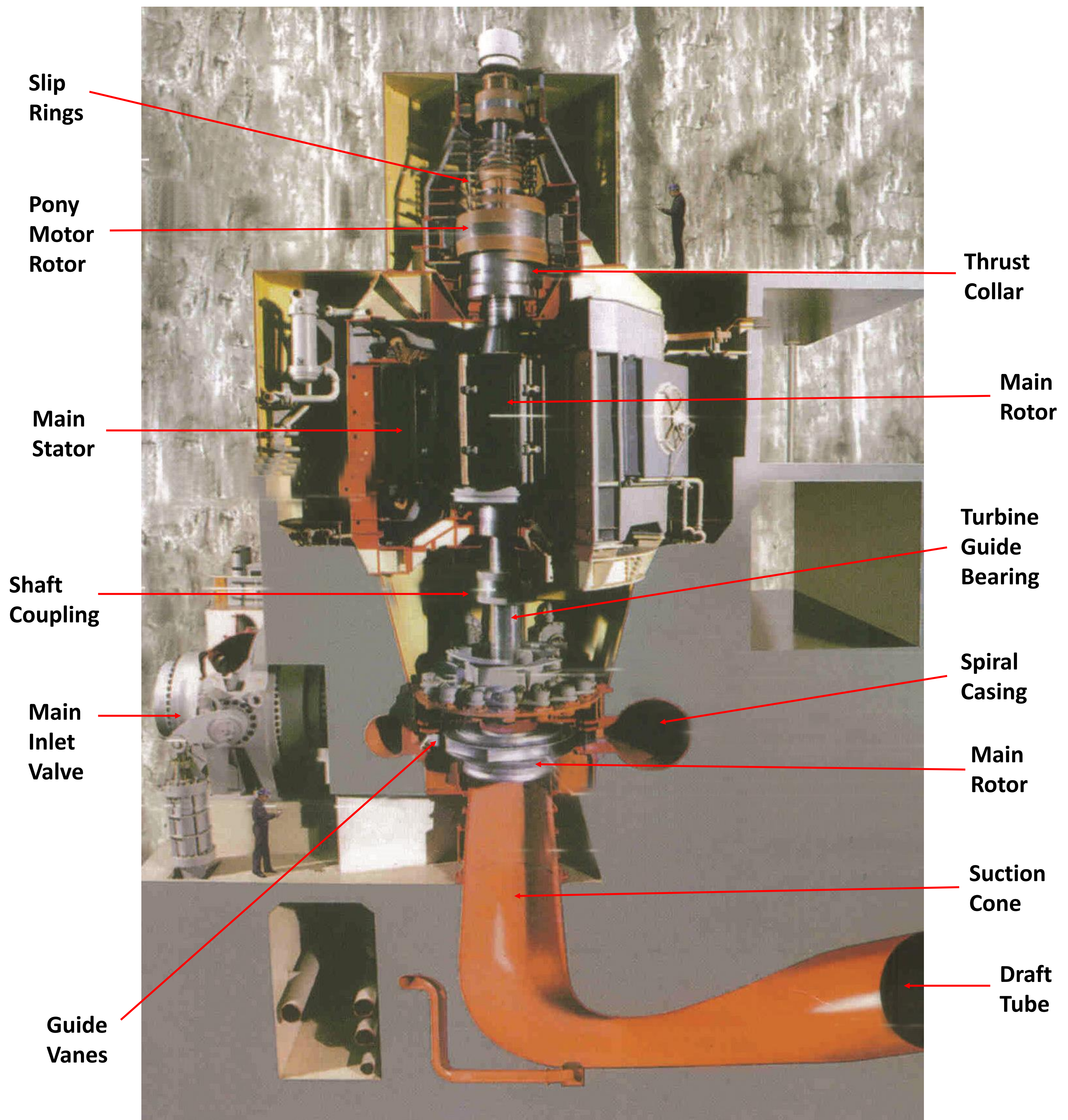
- **Construction noise:** there will be limited impact on the surrounding area as the work will be completed underground.
- **Traffic:** whilst there will be a small increase in traffic, the removal of the existing unit components and supply of new equipment will take place over several months and so a daily increase of traffic per day is relatively limited.
- **Increased activity:** there will be around 50 additional staff on-site at peak times during the build process, and where possible local recruitment will be prioritised.
- **Water management:** Cruachan Power Station has a very limited operational impact on the water level of Loch Awe. Water levels on Loch Awe are managed by Scottish and Southern Energy and Drax has an agreement in place in this regard.
- **Overhead lines:** the upgrade of Units 3 and 4 will not impact on the existing overhead lines and no new overhead lines are required as a result of the proposals.
- **Fisheries:** the installation may result in a change to the water flow between Cruachan Reservoir and Loch Awe (around 15%) and impact on fish populations in Loch Awe will be assessed.



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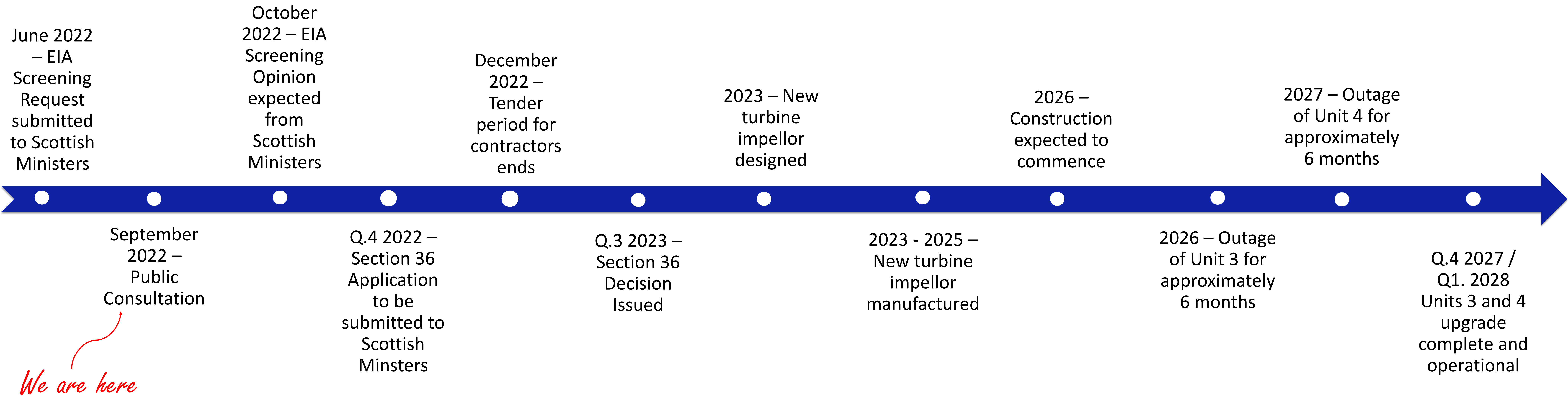
Inside the Units

Each unit weighs over 650 tonnes and houses many parts which all work together to generate electricity.



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Timeline



Feedback

Exhibitions are an important part of the development process, helping engage the local community and interested parties with proposals and work undertaken before an application is submitted to Scottish Ministers.

This exhibition is a chance for us to share our plans and is an opportunity to raise questions, concerns, ideas or comments that can be considered as part of the development process. Now that you’ve seen the initial proposal, we would be grateful if you can share your thoughts with us in any of the following ways:

Complete a Feedback Form Available from the team today	Email: cruachanupgrade@stantec.com
Writing to: Stantec, 5 th Floor, Lomond House, 9 George Square, Glasgow, G2 1DY	Comments should be submitted by: 5 th October 2022

All information is available on the project website: www.cruachanexpansion.com

