

## Review Report on Milestone Proposal

Milestone Proposal: Matsukawa Geothermal Power Plant, 1966

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Proposal:Matsukawa\_Geothermal\_Power\_Plant,\_1966

### (1) Accuracy of the Plaque Citation

Yes. The suggested wording of the Plaque Citation is accurate. It clearly reflects the historical and technical significance of the Matsukawa Geothermal Power Plant as the first commercial geothermal power station in Japan, inaugurated in 1966. The citation appropriately notes its construction by Japan Metals & Chemicals Co., Ltd. and its continuous operation by the Tohoku Electric Power Group, as stated in the Proposal's plaque text.

### (2) Evidence Supporting the Citation

Yes. The proposal provides sufficient and reliable evidence. The "Historical Significance" section and the detailed breakdown under "Technological Innovation and Pioneering Application" cite contemporaneous reports and technical records that document the plant's successful operation since 1966. For example, the adoption of dry steam technology and the development of corrosion-resistant turbine materials are supported by field data and engineering documentation. Reference [1] and [2] in the proposal further substantiate the plant's operational history and technical achievements.

### (3) Significance of the Technical Achievement

Yes. The Matsukawa Geothermal Power Plant represented a pioneering achievement as Japan's first commercial geothermal facility. Its commissioning demonstrated the feasibility of large-scale geothermal energy production in Japan and established a model for later geothermal power development both domestically and internationally. The proposal notes that engineers overcame challenges such as hydrogen sulfide corrosion and low-pressure steam reservoirs, contributing to innovations in turbine design and reservoir management. These achievements are echoed in Reference [3], which discusses early Japanese geothermal engineering efforts.

### (4) Comparison with Similar or Competing Achievements

Yes. The proposal adequately distinguishes this achievement from similar projects. While geothermal power developments occurred earlier in Italy (Larderello), New Zealand (Wairakei), and the USA (The Geysers), the proposers clearly note that Matsukawa was the first commercial application in Japan and Asia. The section "Unique Features Compared to

Global Predecessors” highlights Matsukawa’s adaptation of dry steam technology to Japan’s volcanic geology and its integration with local agriculture and tourism—features not commonly seen in earlier plants.

#### (5) Benefit to Humanity

Yes. The proposal demonstrates clear benefits to humanity. By successfully implementing geothermal power generation, the plant advanced the diversification of Japan’s energy resources, promoted renewable energy use, and reduced dependence on fossil fuels. The Proposal’s “Social and Environmental Importance” section details how the plant supplied warm water to nearby agricultural facilities and contributed to regional development. Reference [4] supports the role of Matsukawa in post-Fukushima energy policy discussions, emphasizing its relevance to sustainable and decentralized energy strategies.

#### (6) Credibility of Supporting References

Yes. The supporting references are credible, drawing on technical papers, government documents, and industry reports. The documentation is sufficient to validate the claims in the proposal. References [1] through [6] include publications from the Japan Geothermal Association, the Japan Society of Mechanical Engineers, and government energy agencies, providing appropriate historical and technical grounding.

#### Conclusion

The Matsukawa Geothermal Power Plant, commissioned in 1966, holds significant technical and historical value as Japan’s first commercial geothermal power station. It demonstrated the practicality of geothermal energy for large-scale electricity generation and laid the foundation for subsequent developments in Japan and abroad. Its designation as a Mechanical Engineering Heritage site in 2016 further affirms its enduring legacy.

I strongly recommend the recognition of “First Commercial Geothermal Power Plant in Japan, 1966” as an IEEE Milestone.



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A handwritten signature in black ink, appearing to read “Masao Isshiki”.