
NORTH AYRSHIRE COUNCIL

31 August 2021

Cabinet

Title: STEP Fusion Power Plant – delegated decision

Purpose: To advise on the decision taken by the Chief Executive under delegated authority to support the nomination of Ardeer as a potential site to be considered for the location of a Fusion Power Plant.

Recommendation: That Cabinet notes:

- i. the decision to support and endorse the nomination of Ardeer as a potential site for this project;
- ii. the subsequent inclusion of North Ayrshire Council support and membership of the consortium in the nomination paperwork; and
- iii. the subsequent support required for the selection process.

1. Executive Summary

- 1.1 North Ayrshire Council has endorsed and supported a bid for Ardeer to be considered by the UK Atomic Energy Authority (UKAEA) and the UK Government as a location for a prototype fusion power station known as STEP (Spherical Tokamak for Energy Production).
- 1.2 Fuller background details about the project are included in the appended Members' briefing dated 11th June 2021.
- 1.3 UKAEA and University of Glasgow presented to Elected Members and community representatives on 17th August 2021 in a virtual briefing session. The purpose of this was to inform key stakeholders of the project and selection process. This session was well attended, generating lots of interest and questions on the technology and the process for site selection.
- 1.4 Site shortlisting is expected late August-early September 2021. A final three sites will be selected by end 2021 and will be scrutinised during 2022. UKAEA will make recommendations to the UK Minister in summer 2022 with a final site decision to be taken by the end of 2022.

2. Background

- 2.1 University of Glasgow School of Physics and Astronomy developed a bid for Ardeer to be nominated for consideration. Three potential sites within Ardeer were identified. This was based on the University's expertise and interest in the field, their understanding of the requirements of the site, and the identified skills base.
- 2.2 They worked with Glasgow City Council, and landowners NPL as a consortium to develop the bid, with advice from Scottish Enterprise.
- 2.3 The closing date for nominations was Wednesday 31st March 2021.
- 2.4 The project was confidential with nothing to be made public before the announcement of the "long list" of sites, expected in mid- May but ultimately made on 11th June.
- 2.5 University of Glasgow met with North Ayrshire Council for the first time on Friday 26th March to request support for the bid nomination. The ask at the time was that the Council endorse the nomination of the Ardeer sites for this project. This would mean inclusion of a line in the nomination paperwork to the effect NAC was supportive of the bid and was noted as a member of the consortium.
- 2.6 On seeking further clarification from the University of Glasgow, it was made clear the consortium was no more than a mechanism by which to make the nomination and would dissolve once the nomination was made.
- 2.7 As a decision to support and endorse the nomination was required urgently, the Chief Executive exercised delegated powers to agree North Ayrshire Council's support for the nomination after having consulted with the Leader of the Council, the Director for Growth and Investment and the Head of Democratic Services. The relevant delegation to the Chief Executive is contained within Section 4 paragraph 15 of Scheme of Delegation.
- 2.8 The in-principle support does not bind or prejudice the determination of any subsequent planning or other regulatory application.
- 2.9 Site nominations ran from December 2020 to March 2021, and Ardeer was announced as one of fifteen long-listed sites in June 2021. Since then desk top assessments and site visits by the selection team have been taking place across the UK with some disruption caused by COVID, however a further sifting of the sites is expected in early Autumn with those making it beyond that stage to go through a more detailed assessment over the Winter. It is understood that recommendations for between 3 and 5 sites will be put forward to the Secretary for State for consideration of working up fully detailed and costed proposals. A final decision on the location is expected by the end of 2022. Officers are working with the University and NPL to support the bid through the selection process. Subject to Ardeer progressing at the various selection stages further briefings and support work with partners to develop the proposal will take place.
- 2.10 Whilst the proposals are at an early stage and there is much to be considered and assessed in regards to this proposal, it does present an immense economic opportunity for North Ayrshire and West of Scotland. The Council will be keen to fully engage with landowners NPL, partners, local community organisation, and Fusion

experts to explore the significance of this opportunity and all its socio, economic and environmental implications.

3. Proposals

3.1 It is proposed that Cabinet notes the following:

- i. The decision by the Council to support and endorse the nomination of Ardeer as a site for this project;
- ii. The resulting inclusion in the nomination paperwork of North Ayrshire Council's support and membership of the consortium; and
- iii. The subsequent support required for the selection process.

4. Implications/Socio-economic Duty

Financial

4.1 There are none arising from this paper.

Human Resources

4.2 There are none arising from this paper.

Legal

4.3 Consultation with Democratic Services to confirm the appropriateness of use of Delegated Powers in this decision.

Equality/Socio-economic

4.4 There are none arising from this paper.

Environmental and Sustainability

4.5 There are none arising from this paper. Should the nomination proceed through the selection process, there will be environmental and sustainability considerations.

Key Priorities

4.6 There are none arising from this paper.

Community Wealth Building

4.7 There are none arising from this paper. Should the nomination proceed through the selection process, the project has potential to support the attainment of Community Wealth Building aims.

5. Consultation

- 5.1 As noted above a briefing event was held on 17th August 2021 for Elected Members and Community representatives with UKAEA and University of Glasgow.

RUSSELL McCUTCHEON
Executive Director (Place)

For further information please contact **Caitriona McAuley, Head of Economic Development and Regeneration**, on **01294 324309**.

Background Papers

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Dear Elected Members

11 June 2021

Briefing Note on UK Atomic Energy Agency (UKAEA) – Ardeer Peninsular shortlisted as one of 15 potential sites for development of STEP (Spherical Tokamak for Energy Production)

Our Council was recently approached by the University of Glasgow to support a highly confidential bid to explore the potential for the development of a fusion power plant within the Ardeer peninsular. The bid was also backed by NPL Group who own the site under consideration.

In providing our support for the project we have taken into consideration the fundamental need to ensure safety and environmental protection from any eventual development.

Today the UK Atomic Energy Agency (UKAEA) has announced that Ardeer Peninsular, Stevenston has been shortlisted as a possible site for a fusion energy plant - known as a STEP. The particulars of the announcement can be found at - <https://www.gov.uk/government/news/uks-prototype-fusion-energy-plant-is-one-step-closer-to-finding-a-home>

STEP (Spherical Tokamak for Energy Production) is an ambitious programme to design and construct a prototype fusion power plant, capable of providing an environmentally friendly source of electricity.

Glasgow University submitted an expression of interest to the UK Atomic Energy Authority, who considered sites across the UK, drawing up a short list of possible locations. The UKAEA shortlisted 15 potential UK sites for the prototype facility. This includes the Ardeer peninsula.

It is important to recognise that the decision-making process remains at a very early stage. Over the coming months there will be a series of further rounds of eliminations, after more scrutiny is applied to the applications.

Final site selection is expected to take place late 2022. Initial site visits are expected to take place during the summer of 2021. Full details of the assessment process will be provided in due course. However, on completion of the assessment process, UKAEA will make recommendations to the UK Secretary of State for Business, Energy and Industrial Strategy, who will make a final decision on the site around the end of 2022.

There is little doubt that such cutting-edge technology would bring substantial long-term economic benefits to the area, together with significant supply chain, innovation, and educational opportunities. The UKAEA expects the final STEP site to be a significant new source of local employment in the coming decades.

STEP is supported by £222m in funding from the UK government to design and construct a prototype fusion energy plant. The programme is targeting a concept design by 2024, with operations planned to begin around 2040.

Clearly, this opportunity needs to be balanced with environmental and safety considerations and would require rigorous evaluation and community and stakeholder consultation.

It is recognised that, while we are still at the early stages of this process, many local community groups and organisations will be interested in the overall STEP (Spherical Tokamak for Energy Production) technology and decision-making process, therefore we will ensure that members and all stakeholders are kept well informed as we move through the site selection process.

Members should be reassured that the UKAEA place great importance on collaboration, the ability to deliver social benefits, and working with local communities in determining the eventual siting of STEP.

Some additional informational

What is Fusion Power?

Fusion and tokamak technology have enormous potential to deliver zero-carbon energy and support the step change needed to achieve net-zero targets.

Fusion is the opposite of nuclear fission. Where fission splits an unstable atomic nucleus, fusion fuses two nuclei to release energy. It is the process that naturally occurs inside stars.

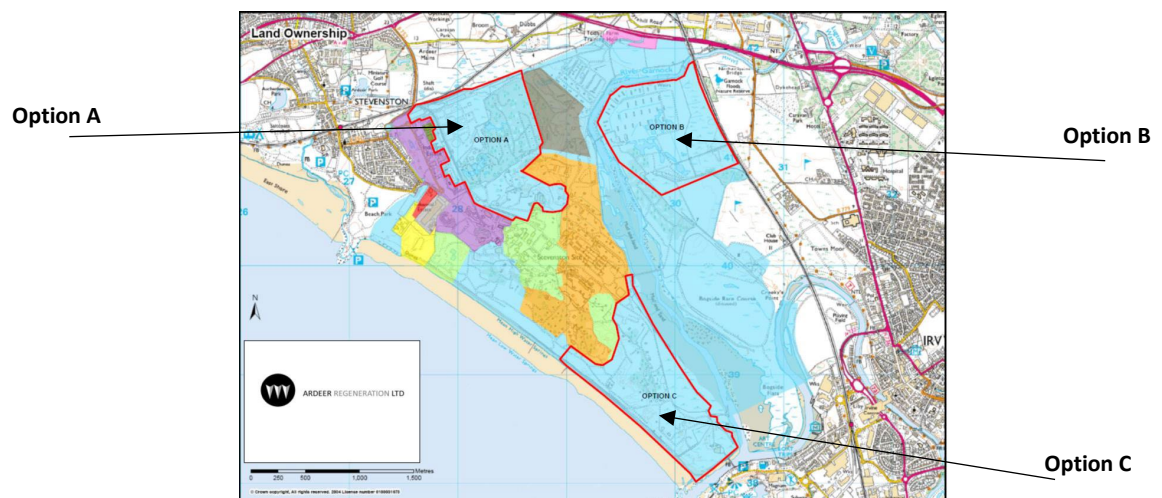
No radioactive waste is produced, and the only by-product is helium.

Why Ardeer?

There are specific site requirements for STEP.

- Not less than 100 Hectares / 247 acres
- Good logistics and connections, preferably near port, rail and road.
- Grid connectivity
- Access to skills and academic expertise

There are three possible locations on Ardeer that could potentially house the facility (Options A,B and C).



Other Scottish Sites under consideration

The University of Glasgow led consortium has proposed three sites in Scotland, all of which have been longlisted:

Ardeer Peninsula, North Ayrshire

East Airdrie, North Lanarkshire.

Poneil, South Lanarkshire.