Grid Enhancing Technologies Program Expression of Interest

1. Purpose and objectives

The Government announced in its Mid-Year Economic and Fiscal Outlook 2024-25 additional funding of $1.2 billion over six years from 2024-25 to modernise Australia's electricity grids and accelerate connection times for new renewable and storage projects. This includes $36.9 million over six years from 2024-25 to support the optimisation and utilisation of existing grid infrastructure through regulatory reforms, new technology adoption, and grant funding.

As part of this funding the Grid Enhancing Technologies (GETs) competitive grants program (the program) will deliver $30 million over four years from 2025-26 to 2028-29. A single grant application and selection round is envisaged to open by mid-2025.

We are seeking expressions of interest (EOIs) from industry including network service providers on what projects are likely to come forward in the grants program.

- **Your responses are non-binding and will be used to inform program implementation and development of grant guidelines.**
- **Information provided will be kept confidential and will be handled under program specific probity and confidentiality protocols within the Department.**
- **Program information in this paper is indicative only. The final grant guidelines will specify all program requirements.**

How to Respond:

- **Submit your response by 28 March 2025 through the *Grid enhancing technologies for electricity networks: costs and incentives for industry* consultation page available at:** https://consult.dcceew.gov.au/grid-enhancing-technologies-for-electricity-networks-costs-and-incentives-for-industry.

For any questions related to this EOI please contact electricitynetworks@dcceew.gov.au.

1.1. Intent and objectives of the GETs grants program

The program aims to deliver benefits for energy consumers by accelerating the development, trialling and application of grid enhancing technologies in Australian electricity networks.

Grid enhancing technologies can support the most efficient use of Australia's electricity network, reducing the need for network augmentation, and increasing network hosting capacity to support greater penetration of renewable energy. Grant applicants are expected

to include network service providers and technology providers to develop, trial and apply technologies to existing networks.

The program seeks to support technologies that increase the capacity and efficiency of the existing network (poles and wires). Projects are expected to demonstrate the delivery of benefits for energy consumers such as: lower costs and higher network productivity, reducing congestion "black spots" on existing power lines, greater energy security and reliability, better control and monitoring of infrastructure, and improved resilience to extreme weather and hazards.

Initial consultation has identified potential barriers to faster deployment of grid technologies including short-term additional costs, the need to test and observe performance to build confidence in technologies, and the need to de-risk approaches to ensure outcomes are as expected and adhere to legislation and compliance programs.

The program aims to de-risk the commercial application of GETs in Australian networks and develop an expanded evidence base. The objectives of the program are to accelerate the application of GETs to distribution and transmission networks by:

- Supporting near-term demonstration and application of grid enhancing technology projects.
- Strengthening the pathway for industry-led applications through the regulatory system by delivering proof of concept, evidence of viability and commerciality in Australia.
- Accelerating the uptake of GETs that are in an early stage of technological readiness. This includes piloting and testing new and emerging GETs that require further development before being applied widely to networks, as well as the application of already tested GETs at scale.

1.2. Benefits of grid enhancing technologies

The electricity sector is experiencing increases in the demand for electricity and a rapid shift towards renewable energy resources. To accommodate this transition, Australia's electricity grid requires significant upgrades to increase its capacity and flexibility.

New large-scale transmission investments are critical to allow renewable generation to connect to the grid and to better link regions to improve the operation of the National Electricity Market. In addition, there is an opportunity to increase the efficiency and carrying capacity of the existing network. This would increase the sector's productivity and lead to better outcomes for consumers.

A future-ready network needs to expand its capacity and become more flexible to allow more renewables into the grid sooner. GETs can help with this by delivering fast and cost-effective capacity increases and supporting the most efficient use of Australia's electricity network.

At the transmission level, GETs can deliver fast, cost-effective increases to the capacity and efficiency of transmission infrastructure to allow more renewable energy to enter the grid sooner and enhance system security and reliability.

At the distribution level, GETs can increase network hosting capacity, improve grid flexibility and streamline the rollout of consumer energy resources. GETs can help network service providers to understand which parts of their network have spare hosting capacity. This enables generation and storage to connect to the best locations in distribution networks, improving the economic efficiency of utility-scale and community batteries. It also allows consumers to get the most out of their rooftop solar and home batteries.

1.3. Technologies that may be funded

GETs encompass a broad range of technological solutions that can maximise the transfer of electricity across existing networks by increasing the capacity and utilisation of networks and mitigating current network limitations.

They include hardware and software solutions, analytical tools and techniques, including sensors, power flow control devices, network augmentations, battery firming techniques and demand response and analytical tools. They often make use of increased digitisation and real-time modelling, communication and control. They can be leveraged further by advances in simulation and modelling, combined with increased sensing, measurement and artificial intelligence.

A list of examples of technologies that could be included in this grants program include but are not limited to:

- **Virtual transmission** – involves the application of utility-scale battery storage connected to networks to store excess renewable generation and discharge it when demand requires. It is enabled by digitalisation and energy management software. Virtual transmission can be implemented quickly, at a low cost and with minimal environmental impact to mitigate grid congestion. This allows more variable renewable energy to be integrated into the grid sooner.
- **Advanced conductors and infrastructure** – wiring and infrastructure which makes use of stronger, lightweight materials with benefits for energy transmission and lower cost of deployment and operation. Advanced conductors can be applied to new transmission builds or used to upgrade existing transmission infrastructure to improve the capacity, strength and efficiency of overhead lines at a lower cost.
- **Dynamic line ratings** – hardware and/or software that updates calculated thermal limits of existing transmission lines in real time. The capacity of power lines to carry electricity is significantly influenced by environmental factors such as temperature, wind speed, and solar radiation. Collection and analysis of this data allows system operators to determine the true, real-time capacity of lines, and enables more energy to go through transmission lines in conditions when thermal constraints are reduced.

2. Expression of Interest

We are seeking expressions of interest from industry including network service providers on what projects are likely to come forward in the grants program. This includes applying grid enhancing technologies through a trial, field test, pilot, demonstration or deployment program funded by this grants program.

Please submit your responses to the survey below via the Have Your Say survey page.

Expressions of Interest

Please provide a separate response for each individual project you expect to submit under the program.

1. **Project description**
   - Name and description:
   - Start and end date for the project:
   - Project stages and milestones:
   - Project location(s):

     Note: Include detail on specific existing or new network assets involved.
2. **Project participants and partners**
   - Lead grant applicant:

     Note: must be an Australian organisation.
   - Project partners and participants:
   - Expected support of the relevant State or Territory government:
   - Stakeholders your project will affect and proposed engagement plan:
3. **Project outcomes**
   - Expected outcomes including benefits to electricity consumers:

     (*Note: refer to draft assessment criteria below in your answer*)
   - Proposed performance metrics:
4. **Project funding**
   - Estimated total project cost (excluding GST):
   - Proposed grant funding sought, phased over each financial year:
   - Proposed contribution by your organisation including cash and in-kind contributions:
   - Any other funding sources including cash and in-kind contributions:

5. **Technologies and project activities**
    - Detail the project activities and technologies involved:
    - Indicate level of technological readiness:

      (Note: indicate if this is an application of an existing technology to a network, a field trial, a desktop study, or a combination)
6. **Project risks and dependencies**
    - Describe key risks and mitigation strategies involved in the project:

3. Design feedback

This section outlines an initial draft of program design detail. This information is subject to change. Detailed grant guidelines to inform funding decisions will be developed following this consultation.

We are seeking potential applicant's feedback on the below Assessment criteria (Section 3.1) and eligibility criteria (Section 3.2).

3.1. Assessment criteria

The program is expected to consider applications for projects across transmission and distribution networks and will support projects at different stages of technological readiness. This includes tested and established technologies that are ready for nearer-term deployment to networks or the Australian Energy Market Operator, as well as projects piloting and testing emerging technologies or technologies with limited proof of concept in Australia.

Assessment criteria will be developed in further detail and may include the ability to demonstrate:

a) How the grid technology will, or has the potential to, optimise existing networks to achieve lower costs for consumers, increase renewable energy penetration and/or improve security and reliability.
b) Applicant's capacity, capability and resources to deliver the project.
c) How the project will leverage existing financial resources, existing network resources and infrastructure.
d) The potential to contribute to an evidence base and knowledge sharing of the network optimisation solution through real world application in the Australian context. This includes how new knowledge from the project will be shared.
e) How the project can be scaled in the context of the specific Australian network.
f) Ability to demonstrate the potential for a technology to attract private capital investment.

g) How the project would be additional and deliver benefits further to existing innovation activities, such as projects included in a Network Capability Incentive Performance Action Plan or funded under another relevant scheme or program, including through the Australian Renewable Energy Agency.

h) The anticipated project delivery timeframe, and ability to deliver the project within the grant period.

Further relevant considerations could include:

- Whether the project is receiving, or has previously received, funding from another Government grant source.

Consultation – Assessment criteria

7. Please provide feedback on expected assessment criteria including any suggested changes.

3.2. Expected Eligibility

Eligibility is expected to include businesses registered in Australia with the capacity and capability to undertake eligible projects. For example, projects may involve Australian network businesses, technology or engineering companies and research or academic organisations. Support and/or involvement of the relevant State or Territory government is also expected.

We expect joint applications may be proposed such as a network business in partnership with a technology provider or other organisation. Joint applications require a lead organisation. The lead applicant must be an entity incorporated in Australia.

Entities that are eligible to participate as project partners, but not as the lead applicant, include entities registered overseas, such as an overseas technology or software business, Commonwealth, state, territory or local government bodies, as well as corporate and non-corporate commonwealth entities. A full list will be included in the grant guidelines.

Eligible grant activities

We expect project activities will need to:

- be primarily designed to meet the objectives and principles of the program.
- involve at least $100,000 in eligible expenditure, and
- be primarily located within Australia

Consultation – Eligibility criteria

8. Please provide feedback on expected eligibility including any suggested changes.