



Industrial Energy Transformation Studies (IETS) Program

Information Session



Australian Government
Australian Renewable
Energy Agency

ARENA



Introductions

Dan Sturrock

Business Development and
Transactions

Peter Haenke

Business Development and
Transactions

Gautham Shankar

Business Development
and Transactions

Lauren Vincent

Business Development and
Transactions



Agenda

1. Welcome and Introduction to ARENA
2. Program Overview
3. Eligibility Criteria
4. ARENA's Assessment Process and the Merit Criteria
5. Key links and dates
6. Q&A



1. Welcome and Introduction to ARENA

ARENA's Purpose

ARENA is the Australian Renewable Energy Agency.

The Agency was established by the Australian Government in July 2012 .

Our purpose is to support the global transition to net zero emissions by accelerating the pace of pre-commercial innovation, to the benefit of Australian consumers, businesses and workers.

To support the global transition to net zero emissions by accelerating the pace of pre-commercial innovation, to the benefit of Australian consumers, businesses and workers.



INVESTED

\$1.86B



PROJECTS

628



VALUE

\$8.05B



INVESTMENT LEVERAGE

\$1:\$3.32



INVESTMENT BY TECHNOLOGY

BIOENERGY



\$131M

GEOTHERMAL



\$42M

GRID INTEGRATION

\$348M



HYBRID

\$112M



HYDROGEN

\$88M



OCEAN

\$44M



SOLAR PV

\$732M



SOLAR THERMAL

\$177M



STORAGE - BATTERIES/PHES

\$188M

INVESTMENT BY STATE

NT PROJECTS
8
INVESTED
\$40M
VALUE
\$82M

WA PROJECTS
42
INVESTED
\$205M
VALUE
\$1.88B

SA PROJECTS
55
INVESTED
\$146M
VALUE
\$606M

TAS PROJECTS
21
INVESTED
\$40M
VALUE
\$99M

VIC PROJECTS
115
INVESTED
\$230M
VALUE
\$548M

QLD PROJECTS
65
INVESTED
\$259M
VALUE
\$2.01B

NSW PROJECTS
251
INVESTED
\$871M*
VALUE
\$2.62B

ACT PROJECTS
71
INVESTED
\$71M
VALUE
\$195M

INVESTMENT LEVERAGE ALONG THE INNOVATION CHAIN

STUDY

\$1:\$1.71



R&D

\$1:\$1.64



DEMONSTRATION

\$1:\$1.85



DEPLOYMENT

\$1:\$6.25



* Includes \$567 million contributed to projects inherited by ARENA in 2012.

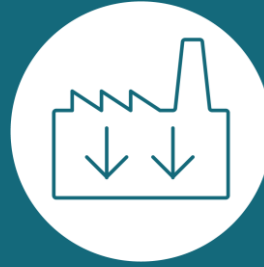
OUR STRATEGIC PRIORITIES



OPTIMISE THE
TRANSITION TO
RENEWABLE
ELECTRICITY



COMMERCIALISE
CLEAN
HYDROGEN



SUPPORT THE
TRANSITION TO
LOW EMISSIONS
METALS



DECARBONISING
LAND
TRANSPORT

Deliver the Budget programs

Future Fuels Program | **Industry Energy Transformation Studies Program** | Regional Australia Microgrid Pilots Program

2. Program Overview

Overview and strategic intent of the IETS Program

The Industry Energy Transformation Studies Program (the **Program**) was announced in the October 2020 Commonwealth Budget.

Funding of up to **\$43 million** to be administered by ARENA (amount may be reduced or increased at ARENA's discretion).

Program objective:

Support **feasibility studies and engineering (FEED) studies** and associated metering which can **enable an investment decision in energy efficiency and renewable energy** solutions for industrial processes.

Program objectives

Studies will need to:

- Be either a **Feasibility or Engineering (FEED)** Study.
- Address **energy use** in an **industrial process**.
- Assess use of **energy efficiency or renewable energy** technologies.
- Demonstrate **transformational change in energy use and carbon emissions**
- Demonstrate **replicability** to similar processes

Eligibility and Merit Criteria are discussed in greater detail in Sections 3 and 4 of the webinar.

Program summary

- **Timeframe:** Program opened on 29 September 2022 with periodic assessment (approximately quarterly)
- **Total ARENA grant funding** \$43 million, which may be reduced or increased at the discretion of the ARENA Board
- **Assessment process:** Eligible applications will be assessed using the Merit Criteria
- **Portfolio fit:** ARENA will review applications against the existing and emerging project portfolio

A: Feasibility Studies

- Single stage application process
- Grant sizes \$100,000 to \$500,000
- Maximum 50% grant contribution
- Lesser contributions may be advantageous

B: Engineering (FEED) Studies

- Two stage application process
- Grant sizes \$250,000 to \$5,000,000
- Maximum 50% grant contribution
- Lesser contributions may be advantageous

Notice

The prevailing Guidelines for Streams A and B may be revoked or varied by ARENA from time to time. Where this occurs, all current Applicants will be notified in writing of any such amendment and a notice will also be posted on the Program web page at <https://arena.gov.au/funding/industrial-energy-transformation-studies-program/>.

IETS Program Objective

The Program seeks studies investigating the use of technologies which will:

- Deliver a **transformational improvement** in industrial **energy efficiency** as compared to business as usual energy use; and/or
- deliver a **transformational increase** in **renewable energy use** as compared to business as usual energy use; and
- deliver **transformational reduction** in **greenhouse gas emissions** below business as usual emissions, and
- demonstrate **high replicability** potential across similar industrial settings.

IETS Program Overview

A: Feasibility Studies

- Assessment of the practicality of a proposed technology solution and its costs and benefits
- Establish whether the potential technology is technically or commercially viable
- Reach a conclusion on whether further development of the solution is warranted
- Focus on whether there are specific barriers to deployment and determine the costs and benefits of the Project

- Grant sizes \$100,000 to \$500,000
- Maximum 50% grant contribution
- Lesser contributions may be advantageous

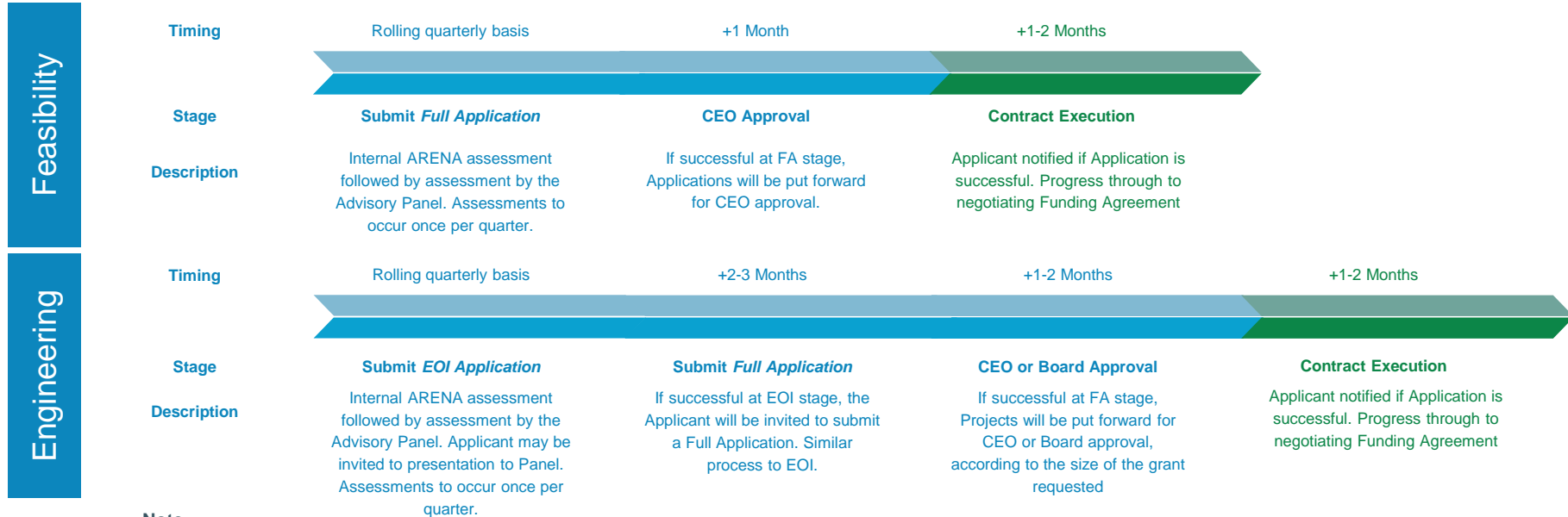
B: Engineering (FEED) Studies

- Conducted after completion of Conceptual Design or Feasibility Study
- Provide sufficient Project detail to enable a Final Investment Decision a subsequent EPC (Engineering, Procurement and Construction) contract to be executed
- Show appropriate consideration for an estimated amount of any additional grant funding required to implement the Project and the basis for this estimate

- Grant sizes \$250,000 to \$5,000,000
- Maximum 50% grant contribution
- Lesser contributions may be advantageous

Program operation and timeline

The Program is open for applications from 29 September 2022. Applications will be assessed on a rolling quarterly basis. Further information on timing will be released on ARENA's website.



Note:

- **Assessment frequency:** Panel first Wednesday of the month on a quarterly basis. Applications less than three weeks prior to the Panel meeting will be held over to the subsequent Panel meeting.
- **Notification of Application outcome:** For each stage, the Applicant is notified if Application is successful prior to moving to next stage
- **ARENA guidance:** ARENA staff are available to provide guidance throughout application process

3. Eligibility Criteria

Eligibility Criteria

A - Eligible Applicant	<ul style="list-style-type: none"> ● Hold an Australian Business Number (ABN) and be: <ul style="list-style-type: none"> ○ an Australian entity incorporated under the Corporations Act 2001 (Cth); or ○ an Australian State or Territory owned corporation or a subsidiary of an Australian state or territory owned corporation; or ○ an Australian local government or council.
B - Eligible Study	<ul style="list-style-type: none"> ● involves energy efficiency and/or renewable energy and/or enabling technologies; and ● applies to an industrial site or sites located in Australia; and ● addresses either or both Scope 1 and Scope 2 greenhouse gas emissions
C - Take place in Australia	<ul style="list-style-type: none"> ● The Study must take place primarily in Australia
D - Intellectual Property	<ul style="list-style-type: none"> ● Must warrant that the Applicant has ownership or access to any IP necessary to complete the project
E - Workplace Gender Equality	<ul style="list-style-type: none"> ● Applicant must not be named as being non-compliant with the <i>Workplace Gender Equality Act 2012 (Cth)</i>
F - Modern Slavery	<ul style="list-style-type: none"> ● Must agree to take reasonable steps to identify, assess and address risks of modern slavery practices in its operations and supply chains used to deliver the Project ● Comply with, and assist ARENA to comply with, required obligations under the Modern Slavery Act.
G - Sanctions	<ul style="list-style-type: none"> ● Applicant must not have contravened the <i>Corporations Act 2001 (Cth)</i> or any Australian Sanctions Laws
H - Knowledge Sharing	<ul style="list-style-type: none"> ● Must agree to ARENA's Knowledge Sharing Plan, which is included as part of the Funding Agreement template.

Eligibility Criteria B: Eligible Project (Energy Efficiency)

Refer to Guidelines 1.10, 1.11 and 1.12

1.10 To be eligible under the Program, the proposed Study must focus on one or both of the following themes.

1.11 Energy efficiency: Energy efficiency studies must investigate technologies that improve the energy efficiency of an industrial process or processes on the identified site/s. These technologies will be primarily focussed on reducing the energy requirements of existing processes on site. Eligible technologies must have been proven to work through successful operation on existing processes and/or be qualified through test and demonstration.

1.12 Examples of eligible technologies include, but are not limited to:

- a. heat pumps for process heat,
- b. improved process control,
- c. high efficiency equipment,
- d. waste heat and energy recovery.

Eligibility Criteria B: Eligible Project (Renewable Energy)

Refer to Guidelines 1.13, 1.14 and 1.15

1.13 Renewable energy: Decarbonisation Renewable energy studies must investigate renewable energy or enabling technologies that will result in a significant reduction in the greenhouse gas emissions of an industrial process or processes on the identified site.

1.14 ARENA recognises that decarbonisation renewable energy technologies may be less developed in commercial settings however, the technology should either:

- a. have been proven to work through successful operations and/or is qualified through test and demonstration, or
- b. be currently at a working prototype stage which requires demonstration of an actual system prototype in an operational environment

1.15 Examples of eligible renewable energy technologies include, but are not limited to:

- a. electrification technologies, where the electricity is intended to be sourced from renewable supply;
- b. renewable fuels, such as bioenergy or renewable hydrogen;
- c. solar thermal energy;
- d. geothermal energy;
- e. energy storage (including thermal energy storage) where this enables or supports the renewable energy technology;
- f. load flexibility (such as processes with flexible energy demand that can be more easily matched with renewable electricity supply).

Feasibility Study Requirements

Part 1.18 - 1.22 of the Guidelines - requirements for a suitable Feasibility Study

- ARENA defines a Feasibility Study (**Study**) as an assessment of the practicality of a proposed Project. A feasibility study aims to provide an independent assessment that examines all aspects of a proposed Project, including technical, economic, financial, legal, and environmental considerations.
- The Study should demonstrate the economic case for the technology and associated energy or emission reductions while ensuring that the technological barriers are identified and are manageable. ARENA expects that Feasibility Studies will be completed within a maximum duration of 12 months
- The Study should:
 - investigate a technology solution that improves the energy efficiency or reduces the greenhouse gas emissions of an industrial process or achieves both;
 - investigate the costs and benefits of the technology, and how it would perform compared to the existing or 'business as usual' industrial process technology. This should consider any potential impacts on operability, environmental benefits and scheduling of the plant;
 - establish whether or not the potential technology is technically and commercially viable at the proposed site;
 - enable the Applicant to reach a conclusion on whether or not further development of the proposed technology solution is cost-effective, with the aim of deploying the technology permanently;
 - particularly consider whether the technology is sufficiently well-developed and identify any specific barriers to deployment within the industrial process; and
 - provide an estimated amount of any additional grant funding required to implement the Project and the basis for this estimate

Engineering Study Requirements

Part 1.18 - 1.22 of the Guidelines - requirements for a suitable Engineering Study

- ARENA defines an Engineering Study (**Study**) as a Study conducted after completion of Conceptual Design or Feasibility Study and with the purpose of providing sufficient Project detail to enable a Final Investment Decision to be made and a subsequent EPC (Engineering, Procurement and Construction) contract to be executed.
- ARENA expects that Engineering Studies will be completed within a maximum duration of 24 months.
- The Study should show appropriate consideration of:
 - technical approach including but not limited to performance and commissioning and acquisition of materials, expertise etc;
 - plan for how and when the intervention would be deployed and how any disruption to existing processes would be managed;
 - process flow diagrams;
 - process and instrumentation diagrams;
 - electrical diagrams;
 - facility plot plan;
 - civil and structural design and layout
 - piping and mechanical design
 - refined budget and scope for the project
 - carbon reduction by volume, cost and/ or analysis of other benefits;
 - health and safety, and permitting;
 - planning and consent;
 - environmental impacts;
 - project delivery requirements and scheduling including identified contractors;
 - project risks and risk management strategy; and
 - an estimated amount of any additional grant funding required to implement the Project and the basis for this estimate.



4. ARENA's Assessment Process and meeting the Merit Criteria

ARENA's assessment process - Feasibility Studies

One stage process

- Submit Feasibility Study Full Application online through ARENA's Grant Management System ARENANet.
- Receive confirmation that Feasibility Study has been accepted.

Eligibility Criteria

- 7 eligibility criteria (A - G)
- All must be met to proceed to merit assessment

Merit Criteria

- All 4 merit criteria equally weighted
- ARENA Advisory Panel will assess applications against merit criteria
- Applications assessed as overall high merit may be invited to negotiate a Funding Agreement
- Conditions to funding may be provided by ARENA

ARENA's assessment process - Engineering Studies

Two stage process

- Submit Engineering Study Expression of Interest online through ARENA's Grant Management System ARENANet.
- Receive confirmation that Engineering Study has been accepted.
- If invited to submit a Full Application, submit additional details online through ARENA's Grant Management System ARENANet.

Eligibility Criteria

- 7 eligibility criteria (A - G)
- All must be met to proceed to merit assessment

Merit Criteria

- All 4 merit criteria equally weighted
- ARENA Advisory Panel will assess applications against merit criteria
- Applications assessed as overall high merit may be invited to negotiate a Funding Agreement
- Conditions to funding may be provided by ARENA

Merit Criteria

- Merit Criterion A: Contribution to the Objectives
- Merit Criterion B: Applicant capability, capacity and commitment
- Merit Criterion C: Study design and methodology
- Merit Criterion D: Value for money and co-funding commitment

Merit Criterion A - Contribution to the Program Objectives

The extent that the Study contributes to the Program Objectives of enabling an investment decision in energy efficiency or renewable energy solutions for industrial processes

Sector Focus

- Studies are sought in the following sectors:
 - Agriculture
 - Mining (except coal mining and oil & gas extraction)
 - Manufacturing
 - Gas supply
 - Water Supply, Sewerage and Drainage Services
 - Waste Collection, Treatment and Disposal Services
 - Data Centres

Technology Solution

- Identify or explain:
 - the technology (or technologies) to be studied. Additional information, diagrams or visual images can be included as part of your Work Plan attachment
 - how the solution is innovative and has the potential to deliver transformative change in energy efficiency and/or renewable energy use and reduction in greenhouse gas emissions in the target industrial application
- Engineering Studies at Full Application also need to identify:
 - A clear pathway to how you will deploy the technology or technologies

Merit Criterion A - Contribution to the Program Objectives (cont.)

The extent that the Study contributes to the Program Objectives of enabling an investment decision in energy efficiency and renewable energy solutions for industrial processes

Potential for renewable energy / energy efficiency and greenhouse gas emissions reduction

- Identify the potential of the proposed Project when implemented, to deliver
 - Reduction in energy use, and/or
 - Increase in renewable energy use, and
 - Decrease in greenhouse gas emissions

Replicability

- Your best estimate of the potential for renewable energy use and emission reductions if the proposed Project is widely replicated
- Describe how the technology could be replicated or adopted by others in the sector
- Describe the existing barriers to broad adoption of the technology solution and how your proposed Project would help to address these

Mandatory Attachments:

	At Full Application
Feasibility Studies and Engineering Studies	Evidence for energy and emission reduction potential (e.g. calculations)
Engineering Studies	Evidence for scaled-up energy and emission reduction potential (e.g. calculations)

Merit Criterion A - Contribution to the Program Objectives (cont.)

The extent that the Study contributes to the Program Objectives of enabling an investment decision in energy efficiency and renewable energy solutions for industrial processes

Alignment with
corporate ambition

- Identify if your organisation has a formal emission reduction goal, pathway or strategy
- Explain how the proposed Project is consistent with the above
- Your answer should consider how the proposed Project supports longer term, deeper emission reduction and avoids 'emission lock-in'

Merit Criterion B - Applicant capability, capacity and commitment

The extent to which the Full Application demonstrates that the Applicant and its partner organisations have the capability and capacity to deliver the Project.

Capability

For Applicant and partner organisation(s):

- Appropriate **expertise** as relevant to the Project - including management, technical, regulatory, commercial and professional expertise and experience of the key personnel

Capacity

- **Access to appropriate resources:** including personnel, physical resources, facilities and infrastructure to achieve the Project outcomes

Commitment

- Identify what **management approval** is required for the Study and subsequent Project (if it proceeds).
- For Engineering Studies, a demonstration of **strong, genuine support** at senior levels within the organisation is required.

Mandatory Attachments:

	At Full Application
Feasibility Studies	Evidence of appropriate management support for the Study
Engineering Studies	Evidence of appropriate management support for the Study

Merit Criterion C - Study design and methodology

The purpose of this Merit Criterion is to assess how well the Applicant has designed and planned the Project, including identifying and managing risks (e.g. personnel, delivery, technical, regulatory and financial), in order to successfully deliver the Study within the timeframe and budget set out in the Application.

Project design

Clear objectives and work plan:

- Well-articulated plan for the Project including:
 - a clear description of the Study;
 - a Study timeline, including start-dates and end-dates (and each phase, if relevant);
 - objectively verifiable milestones and deliverables;
 - Study phases and stage-gates (if relevant);
 - a resource plan
 - the proportion (if any) of the Study that will take place outside Australia;
 - any dependencies that are outside the control of the Applicant and other participating institution(s) or entity(ies), such as any resources or approvals from third parties that are needed to start the Study (other than funding from ARENA); and
 - any other relevant information including any monitoring or metering activities planned

Mandatory Attachments:

	At Full Application
Feasibility Studies	Work Plan
Engineering Studies	Work Plan

Merit Criterion C - Study design and methodology (cont.)

The purpose of this Merit Criterion is to assess how well the Applicant has designed and planned the Project, including identifying and managing risks (e.g. personnel, delivery, technical, regulatory and financial), in order to successfully deliver the Study within the timeframe and budget set out in the Application.

Risks

- Key risks to the Study achieving its objectives and the proposed approach to mitigate the key risks

Compliance table

- Compliance with template Funding Agreement (at Full Application)

Mandatory Attachments:

	At Full Application
Feasibility Studies	Risk Management Plan; Funding Agreement compliance table
Engineering Studies	Risk Management Plan; Funding Agreement compliance table

Merit Criterion D - Financial viability and co-funding commitment

This Merit Criterion assesses the Study's value for money. This assessment will take into account the level of abatement potential relative to the funding contribution requested from ARENA, the relative contribution requested from ARENA relative to the Applicant's funding contribution and, the value of the knowledge sharing benefits that will be made available to the broader industry

Budget table and attachments

- Simple budget table is required in ARENANet
- For Feasibility Studies: A detailed budget and Project financial model may be submitted as separate attachments
- For Engineering Studies: A detailed budget and Project financial model must be submitted as separate attachments

Refer to Appendix A: Eligible Expenditure in the Guidelines for more information on what ARENA funds can and cannot be used for

Additionality

- Justification for overall budget and ARENA funding request

Mandatory Attachments:

	At Full Application
Engineering Studies	Detailed budget in Excel format

Merit Criterion D - Financial viability and co-funding commitment

This Merit Criterion assesses the Study's value for money. This assessment will take into account the level of abatement potential relative to the funding contribution requested from ARENA, the relative contribution requested from ARENA relative to the Applicant's funding contribution and, the value of the knowledge sharing benefits that will be made available to the broader industry

Business Case

- Identify the expected business case for the proposed Project (i.e. approximate costs and benefits and how these are expected to be assessed as part of an investment decision)
- Identify the required hurdle rate (Simple Payback, Internal rate of Return or other) a successful Project would be required to meet
- Provide the estimated amount of any additional grant funding required to implement the Project and the basis for this estimation

Financial capacity

- Identify the financial capacity of the Applicant and any Project partners to deliver the proposed Project, should it proceed

Mandatory Attachments

The following attachments are mandatory. Failure to submit one or more of these attachments may result in your Full Application being considered unsuccessful:

Feasibility Studies

- Supporting evidence for emission reduction potential
- Supporting evidence for the estimate of scaled-up energy and emission reductions
- Evidence of appropriate management support for the Study
- Work Plan
- Risk Management Plan
- Compliance Table to the Funding Agreement

Engineering Studies (at Full Application stage)

- Supporting evidence for emission reduction potential
- Supporting evidence for the estimate of scaled-up energy and emission reductions
- Evidence of appropriate management support for the Study
- Work Plan
- Risk Management Plan
- Compliance Table to the Funding Agreement
- Detailed budget in Excel format

Optional Attachments

The following attachments are optional:

Feasibility Studies

- Evidence of Applicant's emission reduction strategy, goals or pathway
- Up to five (5) CVs of Key Personnel (limit of 2 pages per person)
- Letter(s) of Support from partners or key suppliers
- A detailed budget in Applicant's own template style – for example itemising key equipment, labour and costs. Excel format is preferred

Engineering Studies

- Up to five (5) CVs of Key Personnel (limit of 2 pages per person)
- Letter(s) of Support from partners or key suppliers



5. Key links and dates

Key links and dates

Program opened

29 September 2022

Submissions in 2022

- Contact us now!
- Submissions due mid November 2022
- December Assessment

Submissions in 2023

- Submit in February
- March Assessment
- Thereafter quarterly

Industrial Energy Transformation Studies Webpage

<https://arena.gov.au/funding/industrial-energy-transformation-studies-program/>

ARENANet

arenaomnistar.f1solutions.com.au/ or through the IETS webpage

Guidelines

<https://arena.gov.au/assets/2022/09/industrial-energy-transformation-studies-stream-a-feasibility-studies.pdf>

<https://arena.gov.au/assets/2022/09/industrial-energy-transformation-studies-stream-b-engineering-studies.pdf>

FAQs

<https://arena.gov.au/assets/2022/09/iets-program-frequently-asked-questions.pdf>

Further questions?

Email: industrialenergy@arena.gov.au

End
