



DECARBONISATION RESEARCH FOR INDUSTRY, VENTURES AND ENTERPRISE

DRIVE

ABOUT DRIVE

1. DRIVE is a co-funding scheme that enables companies to initiate and design their own decarbonisation R&D projects in collaboration with local research institutions in Singapore. The scheme supports the costs of the research project to public research performers.
2. DRIVE is governed by the Advanced Energy and Decarbonisation Office (AEDO), working together with Singapore Economic Development Board (EDB) and the Energy Market Authority (EMA) as sector leads for industry and power decarbonisation respectively.
3. DRIVE aims to support the low and medium technology readiness level (TRL 1-6) development of promising, industry- and power sector-relevant decarbonisation technologies that are aligned with Singapore's decarbonisation focus areas and have the potential to achieve commercial scale-up for future deployment in Singapore.
4. The **DRIVE challenge statements for Industry Decarbonisation** are:
 - a. Carbon Capture: Capture low concentration CO₂ flue gas streams (~ ≤3–8%) under high-humidity (>80%), with 95 mol% CO₂ purity, with a full-scale cost of <\$75/tCO₂ by the end of the project;
 - b. Carbon Utilisation: Convert 95 mol% CO₂ feed streams into platform chemicals through thermocatalytic, electrochemical, or microbial routes, including any required CO₂ purification and pre-treatment steps, to be competitive with best-in-class green production (e.g. S\$950/t for methanol and S\$1,500/t for ethylene);
 - c. Other Novel and Emerging Decarbonisation Technologies: Novel technologies for CO₂ storage & alternative chemistries for semicon processes, provision of high temp heating (>800 °C) at efficient levels, step-change improvements in energy efficiency suited to brownfield facilities.
5. The **DRIVE challenge statements for Power Decarbonisation** are:
 - a. Hydrogen and its derivatives:
 - i. Develop fuel-changeover technologies for combustors that enable safe, reliable hot-switching from hydrogen or its derivatives to diesel or other stockpile-compatible fuels within ≤10 minutes, while maintaining combustion stability in accordance with "Section F13 Fuel Changeover Requirements" in EMA's Transmission Code;
 - ii. Develop technologies and inherently safer facility designs to enable high-density deployment of hydrogen and its derivatives, reducing the required health and safety buffer to be contained within an industrial zone for a 1 MTPA H₂-equivalent capacity while meeting prevailing Quantitative Risk Assessment (QRA)/As low as

reasonably practicable (ALARP) requirements and minimising off-site, domino and escalation risks to adjacent infrastructure; and

- iii. Develop scalable, carrier-agnostic dehydrogenation or hydrogen liberation technologies capable of producing end-use-ready H₂ at <\$1.3/kg-H₂ liberation cost, while minimising energy consumption, emissions, footprint and carrier/catalyst losses. Target performance for catalyst should include catalyst lifetime of 1,000-2,000h for pilot scale.

b. Solar:

- i. Develop scalable structural systems for large-span and unconventional PV applications (e.g., solar canopies, overhang solar and BAPV) that reduce installed structural cost by at least 15%, with demonstrable reductions in material use and embodied carbon, improvements in installation productivity while retaining structural strength and waterproofing integrity in accordance with prevailing loading requirements, relative to an equivalent conventional steel solution. Solutions should demonstrate a credible pathway towards materially reducing total installed PV system cost;
- ii. Develop (i) high-efficiency (>30%) solar PV modules with a PV panel price target <\$0.15/Wp and negligible impact on balance of system design at scale, or (ii) lightweight, flexible solar PV modules (efficiency >25%) with a PV panel price target <\$1.25/Wp and negligible impact on balance of system while meeting Singapore's fire standards, while demonstrating scalable manufacturing and long-term durability under Singapore's dense, urban tropical environment. Target performance should include <1%/year power degradation over a ≥25-year service life, resistance to sustained high-temperature/high-humidity conditions (e.g., 85°C/85% relative humidity), mechanical flexibility and fatigue resistance, and stable performance at commercially relevant module areas (≥1 m²), with minimal efficiency loss from cell to module.

- c. Biomass: Develop, demonstrate, and scale universal biomass ash treatment and utilisation technologies to convert biomass ash across regional, variable feedstock (e.g. palm kernel shells, wood chips, wood pellets) into useful products for local applications; meet Singapore's regulatory requirements and end-use specifications; at a target ash treatment cost of <\$50/tonne of biomass ash.

ELIGIBILITY

- 6. All companies are eligible to apply for DRIVE.
- 7. All public research performers included in the application must:

- a. Hold at least 70% primary appointment in a local public research institute (Institutes of Higher Learning (IHLs), A*STAR, or other public sector Research Institutes (RIs)); and
 - b. Maintain the minimum appointment level for the duration of this award.
8. Teams may choose to include multiple public research performers as team Primary Investigators (PIs) on a single project. They may also choose to include Collaborators who are researchers in private companies or in overseas universities. Please note that funding can only be directed to the local public research performer(s).
9. All research work must be done in Singapore.
10. All Total Research and Innovation Expenditure (TRIE) by the Company Applicant must be accrued in Singapore.
11. For avoidance of doubt, the grant will not cover any procurement from the Company Applicant(s) or their related companies¹. Where such procurement is required for the project, Company Applicant(s) are encouraged to provide them as in-kind contributions towards fulfilling their industry co-funding requirements.

FUNDING QUANTUM AND DURATION

12. As a general guideline, DRIVE projects should **not exceed 36 months in duration** and **\$2M in funding per year, inclusive of indirect funding**. Proposals exceeding these guidelines may be considered **on a case-by-case basis**, subject to justification.

OTHER REQUIREMENTS

Industry-related Conditions

13. Proposals should seek to **maximise industry contributions, which may be provided in cash and/or in kind**. The TRIE contribution by the Company Applicant(s) is strongly recommended to be at least 25% of the total project budget (e.g, for every \$3 of DRIVE funding, the Company Applicant(s) should contribute >\$1), of which the industry cash component is recommended to be 5% of total project budget.
14. The award will only be made upon execution of the Research Collaboration Agreement (RCA), which should set out the committed TRIE contributions.

¹ This covers the Company Applicant(s)' holding company, subsidiary, or a fellow subsidiary of its holding company

ASSESSMENT CRITERIA

15. All DRIVE projects are assessed primarily on their potential to **advance decarbonisation technologies relevant to Singapore's context** and **contribute meaningfully to carbon abatement outcomes**.
16. Proposals will be assessed based on the following criteria:
- a. Excellence and Novelty of the technology;
 - b. Strategy for Technical scale up and pilot;
 - c. Strategy for Commercialisation and Deployment of the technology;
 - d. Company Applicant's Suitability or Strategic Growth plans;
 - e. Techno-economic analysis; and
 - f. Other relevant factors.

APPLICATION

17. Applications will be accepted on a rolling basis throughout the year from **23 October 2026**. Applicants may refer to the AEDO website (<https://www.aedo.gov.sg/funding/drive>) for more details. All proposals should **only be submitted** through the **AEDO email** (contactus@aedo.gov.sg). Proposals submitted through other avenues will not be evaluated.
18. Applicants are to complete the proposal template with the necessary information, in addition to attaching the list of documents detailed below for submission:
- a. Full Proposal
 - b. Annex A1 – DRIVE Budget Template (Company Applicant)
 - c. Annex A2 – DRIVE Budget Template (Research Performer)
 - d. Annex B – Financial Performance Documentation
 - e. Annex C – TEA Inputs Excel Template for either TRL 1-3 or 4-6
 - f. Annex D – Consolidation of Curriculum Vitae (CV)
 - g. Annex E – References and Supporting Documents
19. Applicants should ensure that their submission complies with the *RIE Grant Rules* and *RIE Grant Terms & Conditions (T&Cs)*, included in the application package.
20. Proposals must not be concurrently submitted to, or under consideration by, another public funding agency for the same or substantially similar scope of work. Applicants are responsible for ensuring that there is no duplication or overlap in public funding sought for the proposed project and should disclose any related applications or existing funding arrangements, where applicable.

21. To be eligible for review, applications must be **submitted using the latest application forms, with all sections completed, and comply with all specified format and submission requirements.**

22. Proposal information will be handled in confidence and may be shared with relevant parties involved in the evaluation and administration of the grant, as necessary. AEDO reserves the right to modify the evaluation and selection process where necessary. Applicants will be informed of any material changes to the process, where appropriate.

POST-AWARD CONSIDERATIONS

23. Awarded projects will be reviewed regularly. Research teams will be required to submit annual progress reports that cover project progress, deliverables, KPIs and Budget Information, and undergo a mid-term and end-term review (with final report). Additional ad-hoc review meetings may be conducted, if necessary, to assess whether the efforts undertaken were successful in meeting DRIVE objectives and qualitative contributions towards advancing the research in decarbonisation technologies. The Principal Investigator is expected to be present in-person for such review meetings.

24. AEDO will monitor the realisation of TRIE contributions throughout the project. Following award, projects will be managed in accordance with the *RIE Grant Rules* and *RIE Grant T&Cs*. This includes the fulfilment of committed industry contributions and continued viability of the project's commercialisation and/or translation plans.

25. AEDO and its appointed reviewers will oversee the progress of the funded projects and will provide guidance over the research directions and intended deliverables.

CONTACT INFORMATION

26. For further enquiries, please email AEDO at contactus@aedo.gov.sg.

27. AEDO DRIVE TEAM:

- a. Mr Desmond Chua (Director/AEDO)
- b. Mr Chew Xinying (Senior Manager/AEDO)
- c. Dr Yasotha Kathiraser (Senior Manager/AEDO)

The DRIVE team can be contacted through the email address above.