Reducing water consumption and detergent usage for dishwasher and washing machine

Challenge Owner	**Haier Group**
Opening date for proposal submission	**12 November 2019**
Closing date for proposal submission	**14 February 2020, 12 pm (UTC+8)** Proposals and all accompanying attachments must be submitted through the Sustainability Open Innovation Challenge portal.

BACKGROUND

Haier is seeking technologies to reduce water consumption and detergent usage for its dishwasher and washing machine. Most of the dishwashers and washing machines still use detergent and water to remove food, dirt and stains, as well as additional components to kill microorganisms and/or remove odours. Most detergent contains chemicals, which not only wastes water to rinse off, but also poses health concern if any residual remains on dishes/clothes. The drainage of detergent and cleaning water is a burden for the environment. Solutions that have minimal environmental impact are of key interest.

Due to the size limitation of kitchen appliances, Haier is not interested in technologies or designs that cannot be integrated with standard dishwasher/washing machines and require drastic changes to existing appliances.

DESIRED OUTCOMES

Haier is seeking collaborations with partners to integrate novel technologies into their products that can disrupt the washing mode of current products, enhance the cleaning power of water and achieve the same cleaning effect without detergent, and/or reduce the water consumption by 50% or more. Haier is also interested in technologies and/or components that can be integrated with the washing machine to add new functions such as the cleaning of shoes, washing socks and underwear.

TECHNICAL SPECIFICATIONS AND REQUIREMENTS

- Achieve water savings for the washing machine of using less than 5 litres of water to clean 10kg of clothes.
- Solution to replace detergents, if disposable materials are used, should be price-competitive with the detergents on the market.
- Disposables should come with third party test reports stating theirs performance and/or safety and should be ready for scale-up. Proven solutions/technologies (e.g. in other industries or applications) are preferred.
- Applicants are required to have prototype or minimum viable product (MVP) of modules or design for evaluation, or demonstrate that the core technology has been proven in other industries/applications.

- Proposals should include information on any proof-of-concept (POC)/MVP that is non-sensitive.
- Applicant should indicate estimated commercial price of solution, cost of operation/maintenance and cost-benefit analysis of the solution in the proposal.

Besides addressing the above requirements, the proposed solution should also fulfil the following criteria:

- Not be readily or commercially available in the market, for this application.
- Wherever applicable, aim to:
  - Enhance resource efficiency; and/or
  - Reduce reliance on cleaning agents; and/or
  - Improve washing quality, consistency and efficiency; and/or
  - Achieve cost-effectiveness.

BUSINESS OPPORTUNITY

If solution proves to be successful/effective, Haier may adopt and integrate the solution into the wide range of suitable commercial products under Haier and bring them to the global market.

DEVELOPMENT TIMELINE

Solution development and test-bedding should take 6-12 months, and pilot deployment within 24 months.

THE RULES AND REGULATIONS ON THE CHALLENGE WEBSITE APPLIES, WITH ADDITIONAL INFORMATION BELOW.

FUNDING SUPPORT

Enterprise Singapore may support shortlisted local SMEs/startups with funding of up to 70% of the qualifying project cost, capped at $250,000.

Foreign solution providers are encouraged to work with local SMEs/startups for solution development.

ADDITIONAL RESOURCES

Haier will provide in-kind resources for development and verification of the proposed solution, such as user data, Haier products for pilot testing, and mentorship and channels to manufacturing in China etc.

EVALUATION CRITERIA

Proposals will be evaluated against the following criteria:

- Technical feasibility of solution [30%]:
  - Effectiveness in addressing the challenge statement
  - Operational feasibility for deploying the washing technology
  - Minimal disruption to usual washing operation
  - Minimal alterations to existing products
- Economic feasibility of solution [30%]:
  - Commercialisation strategy
  - Estimated commercial price/leasing price
  - Estimated operating, life cycle costs (e.g. energy and maintenance cost to user)
- Capacity and expertise to execute project [25%]:
  - Requisite capabilities and committed resources to undertake solution development
- Clarity of proposal and accompanying information on POC/MVP [15%]

TECHNICAL BRIEFING

A technical briefing will be held to provide interested applicants with more information. The details for the briefing are as follows:

Date :	18 Nov 2019 *(Monday)*
Time:	9am to 12 pm
Location:	230 Victoria Street, Bugis Junction Office Tower, Level 10, Singapore 188024 - Room: Little Red Dot

Please register your interest here by 14 Nov 2019, 12pm.

PROPOSAL SUBMISSION

Submit your proposal using the Application Form, together with all supporting documents, in the Sustainability Innovation Call portal.

CONTACT

For further enquiries, please email:

- jiangj@haiersingapore.com – for matters pertaining to the challenge statement

- Sustainability_Challenge@enterprisesg.gov.sg – for assistance on:
  - *Using the Sustainability Open Innovation portal for registration, submission of proposal, etc.*
  - *Funding enquiry*