



Smart Energy, Sustainable Future



MEDIA RELEASE

21 July 2021

EMA and Shell Renew \$4 Million Partnership to Nurture Local Energy Startups

In support of the Singapore Green Plan 2030 and Singapore's sustainable development, the Energy Market Authority (EMA) and Shell have committed an additional \$4 million, with support from Enterprise Singapore (ESG), to accelerate the growth of local energy startups. This latest partnership renewal takes EMA and Shell's joint commitment to a total of \$8 million, from the \$4 million in the previous partnership. More startups can now deepen their expertise in areas such as renewable energy, energy efficiency and low-carbon solutions through the Shell StartUp Engine programme. This global innovation programme will help startups develop their solutions and expand their market reach through Shell's extensive network.

2 Since the partnership kicked off in 2019, 12 startups have been supported under the Shell StartUp Engine programme. The support included capacity-building workshops, mentorship and opportunities to showcase solutions at key industry events. EMA has also awarded grants to three startups – Anzene, Pylon City and Quantified Energy (QE) Labs, to advance and test-bed their battery solutions for personal mobility devices, autonomous charging for unmanned delivery vehicles and improving the efficiency of deploying solar systems in Singapore. Details of the projects can be found in the [Annex](#).

3 Mr Ngiam Shih Chun, Chief Executive of EMA, said, "Startups add vibrancy to our energy ecosystem. They bring with them innovative solutions and nimbleness to develop new technologies. Such innovations will help to address the industry's needs and ensure the energy sector remains relevant and dynamic. We are pleased to advance this partnership with Shell to support local energy startups in co-creating a more sustainable energy future."

4 "As part of Shell Singapore's 10-year plan to transform our business and cut our own CO₂ emissions, we believe that we must continue pushing for new ideas and piloting them with the ambition to take them to scale. Energy startups are an exciting source of such innovations, and this partnership renewal demonstrates our sustained

commitment to grow the ecosystem with key stakeholders like EMA.” said Ms Aw Kah Peng, Chairman of Shell Companies in Singapore.

5 This partnership is supported by ESG under the Open Innovation initiative, which leverages lead demand from government agencies and business corporations to support SMEs and startups in developing innovative solutions.

6 Mr Png Cheong Boon, Chief Executive of ESG said, “Translating ideas into viable, commercial solutions requires strong partnership between the industry and the innovators. Through this Open Innovation initiative, energy startups are able to participate in projects that allow them to build up new capabilities that the market requires, and in turn gain track record for scaling up further. We are excited to support EMA and Shell’s co-innovation partnership as a conduit to nurture our energy ecosystem.”

7 Application for the Shell StartUp Engine 2021 programme is now open. Interested startups may visit the [Shell website](#) for more details.

Annex: Details of Awarded Projects

– END –

About the Energy Market Authority

The Energy Market Authority (EMA) is a statutory board under the Ministry of Trade and Industry. Our main goals are to ensure a reliable and secure energy supply, promote effective competition in the energy market and develop a dynamic energy sector in Singapore. Through our work, EMA seeks to forge a progressive energy landscape for sustained growth.

Website: www.ema.gov.sg | Follow us: Instagram: @EMA_Singapore | Facebook: facebook.com/EnergyMarketAuthority | Twitter: @EMA_Sg

About Shell in Singapore

As one of the world’s leading energy companies, Shell plays a key role in meeting the world’s growing energy demand in economically, environmentally and socially responsible ways. In Singapore, Shell employs more than 3,100 people and is one of the country’s largest foreign investors. Shell has been in Singapore since 1891 and has businesses including trading and marketing of liquefied natural gas; manufacturing, trading, marketing and shipping of oil products and chemicals; and development of renewable energy solutions. For more information, visit www.shell.com.sg.



About Shell StartUp Engine


Shell StartUp Engine (SSE) is a global innovation programme targeted at early to mid-stage Singapore-based energy startups. Through an accelerated six-month programme, SSE seeks to build startups' capacity, through curated workshops, knowledge sharing, mentorship, showcase opportunities and position them for success in the smart, clean energy landscape. SSE is in line with Shell's target to become a net-zero emissions energy business by 2050, in step with society's progress in achieving the goal of the UN Paris Agreement on climate change. The programme also aims to create lasting value for society through enterprise development.


About Enterprise Singapore

Enterprise Singapore (ESG) is the government agency championing enterprise development. We work with committed companies to build capabilities, innovate and internationalise. We also support the growth of Singapore as a hub for global trading and startups and build trust in Singapore's products and services through quality and standards. Visit www.enterprisesg.gov.sg for more information.

**DETAILS OF AWARDED PROJECTS UNDER THE
EMA-SHELL STARTUP PARTNERSHIP**

Company Name	Anzene Pte Ltd
Project Title	Universal Battery Packs for Personal Mobility Devices
Partners	Ecolabs Centre of Innovation for Energy, Enverse Pte Ltd
Description	<p>Personal mobility (PMD) devices such as e-scooters and e-bikes often experience shortened battery lifespans and need frequent charging after 2-3 years of consistent usage. This results in range anxiety for PMD users and the need for battery replacement, which creates electronic waste and increases costs for PMD users.</p> <p>Project Objective: Anzene’s solution aims to extend PMD’s battery lifespan and improve the recyclability of batteries to minimise e-waste, and also address range anxiety by enabling users to swap batteries.</p> <ul style="list-style-type: none"> • Pilot a plug-and-play universal battery pack that connects to any PMD. Anzene’s battery pack features a sustainable design with at least 30% of the components replaceable to enhance battery lifespan and minimise wastage, alongside real-time monitoring of the battery’ state-of-health to enable timely maintenance. The battery pack also features a patented cell-level fire extinguisher to enhance safety for users. • Pilot charging stations for PMD users to swap or rent battery packs. <p>Project Outcomes: If successful, Anzene intends to partner mobility and convenience stores to host the charging stations and enable customers to swap batteries when needed. This would contribute to building a sustainable Singapore by encouraging active mobility to improve last mile connectivity, and reduce electronic waste.</p>
Photos	<div style="display: flex; justify-content: space-around;">   </div> <p align="center">(Left) Anzene’s Chief Operating Officer Joshua Lin showcasing Anzene’s battery solutions; (Right) Anzene’s battery pack on the e-scooters</p>

Company Name	Pylon City Pte Ltd
Project Title	Sustainable Charging Infrastructure for Unmanned Delivery Vehicles (UDV)
Partners	Whizz Mobility, Hello World Robotics, NTU Ecolabs, Social Innovation Park
Description	<p>The rapid rise and popularity of e-commerce in recent years has created a huge demand for package deliveries. To meet this rising demand and enable contactless deliveries during the COVID-19 pandemic, UDV's serve as an alternative for point-to-point delivery. There is currently limited infrastructure for UDV charging in Singapore, and it still requires manpower to plug them in for charging. To have a fully automated last-mile delivery, we will need infrastructure to support the proliferation of UDV fleet operations in Singapore.</p> <p>Project Objectives: Develop a novel multimodal EV charger that can charge both UDVs and EVs, and a wireless charging bay that enables autonomous UDV charging. The chargers will be piloted at the Social Innovation Park in Punggol and will be powered by solar energy.</p> <p>Launch commercial trials with UDV companies beginning with local startup, Whizz Mobility, to deliver food and groceries from restaurants and grocery suppliers using their UDVs.</p> <p>Project Outcomes: If successful, Pylon City intends to engage property owners, food delivery platforms and logistics partners to roll out Singapore's first UDV charging network that is interoperable with any UDV. The project also aims to contribute to the development of new standards for UDV charging and autonomous last mile delivery.</p>
Photo	 <p>(From left to right) Pylon City's CTO Vincent Lau and CEO Jason Law presenting Pylon City's charging solution.</p>

Company Name	Quantified Energy Labs Pte Ltd (QE-Labs)
Project Title	Improving Efficiency of Solar Photovoltaics (PV) Deployment Using Drone Imaging Solution
Partner	Sembcorp Solar
Description	<p>Singapore is scaling up solar deployment to tackle climate change. Currently, the installation and inspection of solar PV panels such as on-site surveys, progress monitoring and quality control are mostly manually conducted. These processes are usually laborious and time consuming, especially for large solar PV installations.</p> <p>Project Objectives: QE-Labs' solution aims to improve the efficiency of deploying solar PV systems.</p> <ul style="list-style-type: none"> • Improve productivity in designing and optimising new solar PV systems (e.g. avoid shading problems) by developing drones equipped with imaging tools and leveraging 3D modelling and simulation technologies. • Reduce the need for manpower by using drones with high-resolution 2D mapping tools to monitor construction progress against original design. • Prolong operational lifetime of solar PV systems by using advanced thermal (IR) and electroluminescence (EL) imaging to identify and replace defective PV panels. <p>Project Outcomes: If successful, QE-Labs intends to test-bed the solution on a new commercial PV system with reduced manpower required for site surveys, engineering design and construction monitoring by 50%. This would support Singapore's goal to deploy at least 1.5GWp of solar by 2025.</p>
Photo	 <p>(From left to right) QE-Labs Co-founders Dr Karl Bedrich, Dr Khoo Yong Sheng and Dr Wang Yan with their drone</p>