



Smart Energy, Sustainable Future

**Enterprise
Singapore**



MEDIA RELEASE

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Towards Smart and Clean Energy-Powered Service Stations

Three Shell service stations in Tampines, Pasir Ris, and Lakeview will soon be powered by clean energy and provide fast charging for electric vehicles (EVs). The Energy Market Authority (EMA) and Shell have jointly awarded a research grant to a consortium led by local solar company Eigen Energy Pte Ltd (Eigen Energy) to develop Singapore's first series of service stations integrated with smart energy management solutions by 2022. These three service stations are part of Shell's growing network of EV charging points across the island.

2 These efforts support the Singapore Green Plan 2030¹, which outlines Singapore's efforts to almost quadruple our solar energy deployment by 2025 to 1.5 gigawatt-peak (GWp), and support the growth of EVs by doubling the number of EV charging points from 28,000 to 60,000 by 2030.

3 The selected service stations will be powered by solar photovoltaic (PV) panels installed onsite and integrated with energy storage systems (ESS) to mitigate intermittency due to weather conditions. When deployed, the EV chargers will be among the fastest available to the public in Singapore, up to three times faster than the existing Shell Recharge² 50 Kilowatt (kW) rapid DC chargers, depending on the vehicle model. A smart energy management system will also be deployed to integrate and optimise the various resources onsite (i.e. solar PV systems, battery ESS and EV chargers).

4 Mr Ngiam Shih Chun, Chief Executive of EMA, said, "As Singapore scales up solar deployment and electric vehicle adoption, we need innovative and creative ways to enable these sectors to grow. This project utilises smart energy management systems to integrate energy storage systems and electric vehicle charging points

¹ Media release to the Singapore Green Plan 2030 is available at: <https://www.greenplan.gov.sg/resource-room/2021-02-10-press-release-on-green-plan>

² In August 2019, Shell was the first company to launch EV charging services (Shell Recharge) at service stations in Singapore and South East Asia, offering on-the-go charging to motorists. More details at: <https://www.shell.com.sg/media/2019-media-releases/shell-launches-singapores-first-electric-vehicle-charger-at-service-stations.html>

powered by renewable energy. We look forward to co-creating more of such solutions with the industry for a more sustainable Singapore.”

5 “As the drive towards a lower carbon future intensifies, Shell is supporting the country’s push towards more sustainable development by offering faster EV charging which would provide drivers with more choices in decarbonisation. By 2030, we aim to have an extensive network of electric vehicle charging options for our customers, all within a short drive, from their home, workplace or when they are on the go,” said Ms Aw Kah Peng, Chairman of Shell Companies in Singapore.

6 Findings from the project will also be applied to improve safety and lower the compliance cost of future ESS deployments in Singapore. The consortium will be developing an enhanced fire-rated battery container with improved fire resistance to store the ESS. The container will also be equipped with sensors to detect abnormalities in temperature and pressure and react quickly against any potential battery fires. More details of the project can be found in the Annex.

7 This smart energy management solution project is part of a multi-year partnership between EMA and Shell to develop innovative energy solutions and grow local capabilities in the areas of energy storage and digitalisation. The project was started under the ‘Living Lab’ programme by the Shell City Solutions business – a business set up to boost collaborations among city stakeholders to navigate the energy transition. Shell will also be looking into pilots on smart charging, microgrid and virtual power plant technologies.

8 This project is also supported by Enterprise Singapore under the Open Innovation initiative leveraging lead demand from government agencies and corporates. The initiative aims to assist Small and Medium Enterprises (SMEs) and start-ups to collaborate and undertake innovative projects with industry players, to help them develop commercially viable solutions and build track record.

Annex: Details of Project

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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 City Solutions

Shell City Solutions help cities around the world navigate their energy transition towards a lower-carbon future. Their first City Solutions Living Lab was launched last year in Singapore to bolster innovations in integrated urban solutions for mobility, energy and environment. The business works together with city officials, businesses and organisations to co-create and test innovative concepts, technologies and business models in cities.

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 PROJECT

Title	Retail Integrated Smart Energy System (RISES)
Description	<p>The project seeks to deploy an integrated smart energy management system at three Shell service stations. This comprises (i) containerised Lithium-ion battery energy storage system (ESS)³; (ii) electric vehicle (EV) chargers; and (iii) a smart energy management system to integrate and optimise the various resources onsite (i.e. solar PV systems, battery ESS and EV chargers).</p> <p>The smart energy system would enable Shell service stations to integrate more renewables to power its operations and support fast EV charging. When deployed, the EV chargers would be among the fastest EV chargers available to the public in Singapore.</p> <p>The project also seeks to improve the fire safety of the battery ESS by (i) designing cost effective battery containers with improved fire resistance; and ii) develop algorithms and sensor units to enhance early detection of battery cell off-gassing to react quickly to any potential battery fire.</p> <p>Findings from the project are expected to be replicated for future ESS deployments to improve safety, lower compliance cost, and facilitate greater adoption of solar energy in Singapore.</p>
Project Team	<p>Principal Investigator: Eigen Energy Pte Ltd Collaborators: Rolls Royce Singapore Pte Ltd and ABB Pte Ltd</p>
Project Site Photo	<p>Tampines Service Station</p> 

³ The total ESS capacity to be deployed in the three Shell Service stations is 0.74MWh.