

## PRESS RELEASE – Global Sustainable Energy Solutions Pty Ltd (GSES)

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FOR IMMEDIATE RELEASE

### GSES releases a technical paper: *The Duck Curve - the Duck Hunting Season We Want to Have*

Sydney, NSW

Global Sustainable Energy Solutions Pty Ltd (GSES) has released a technical white paper, entitled *The Duck Curve - the Duck Hunting Season We Want to Have*, to explain how high solar PV penetration may cause grid instability and to highlight strategies for the successful integration of solar PV over the long term.

This paper explains how the electricity demand profile, as seen by the network service providers, change with the saturation of solar PV generation from both distributed and utility scale systems. Due to the mismatch between PV generation and typical residential electricity demand, the resulting electricity demand takes on a duck shape; electricity demand lowering during the day to form the duck belly, and ramping up steeply in the evening forming the duck's neck.

The duck curve is a two-fold concern to network operators: an abundance of energy during midday and high ramping demand in the evenings, both of which can place pressure on operations of conventional generators. However, the duck curve effect can be managed with increasingly accurate forecast of renewable energy output, by diversifying the energy mix to include more generation with ramping capacity, and by changing the energy usage pattern with demand side management.

Managing the duck curve effect will require uniform and forward thinking policies be introduced at the grid operation level, at the energy market level, and at the user level to achieve a stable grid with high PV generation.

GSES provides white papers and technical information on its website [Resources](#) page for all readers, including system designers, installers and owners, covering a wide range of topics including: Energy Storage Systems, Utility-scale PV Systems, and Microgrids. **“The Duck Curve - the Duck Hunting Season We Want to Have” technical paper is available to [view and download](#) now free of charge from the GSES website.**

*GSES is a multi-disciplinary renewable energy engineering, training and consultancy company specialising in PV solar design, online and face-to-face solar training, solar book publishing and PV system audits. Collectively, GSES has over 50 years of local and global experience undertaking projects in Australia, NZ, Asia, Africa and the Pacific Islands. GSES leads Australia in education and training in the Renewable Energy Innovation and Technology Sector and actively partners with government, private enterprise and local communities on a global scale in facilitating the growth and development of the renewable energy industry through education, training, engineering, consulting and publications.*

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**ENDS**

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[Link to The Duck Curve - the Duck Hunting Season We Want to Have article](#)

[Link to Resources and Information page](#)