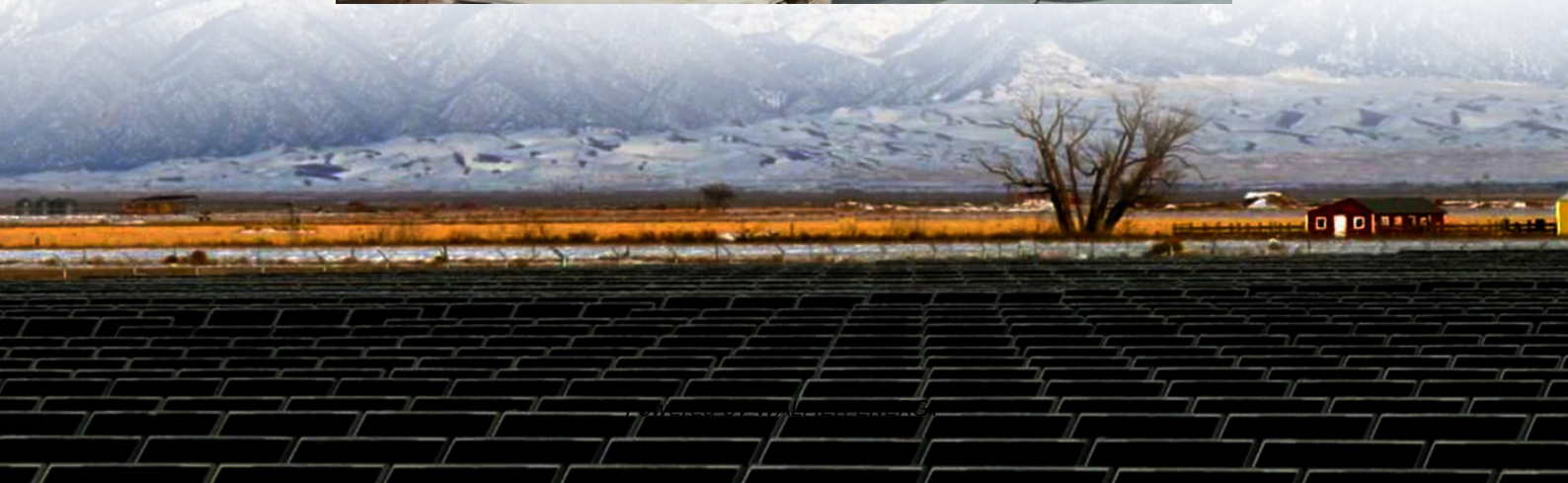
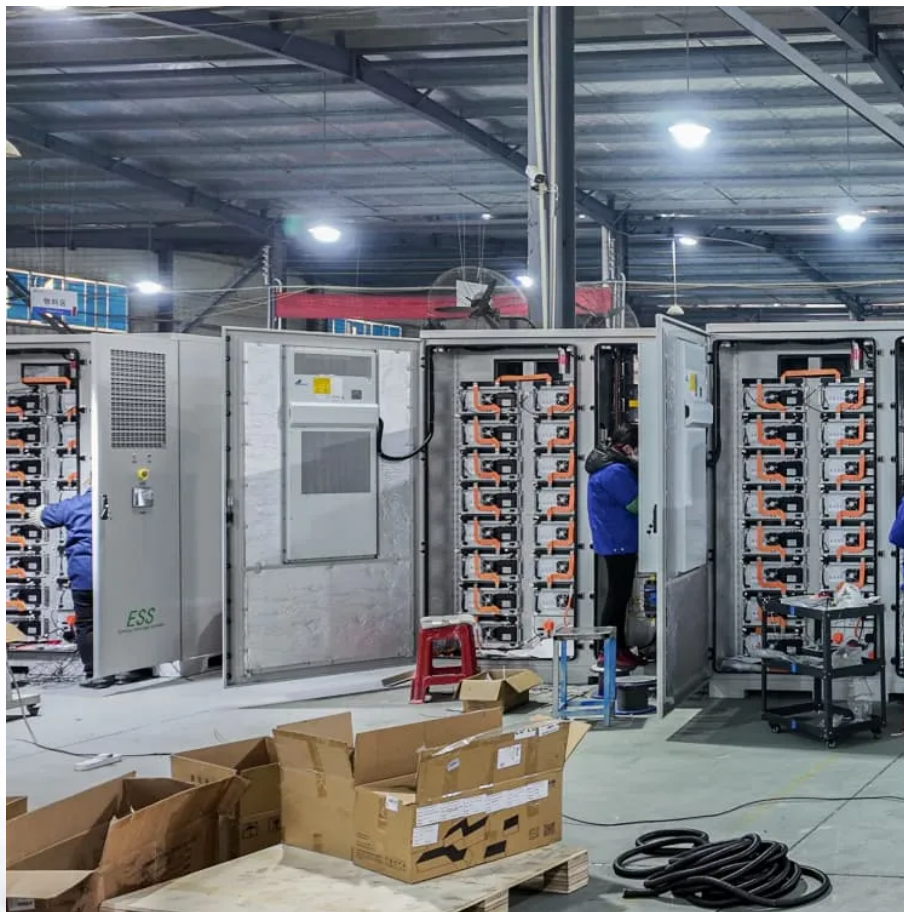


# Off-grid cost of photovoltaic containers used in Russian ports





## Overview

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How much does an off-grid solar-plus-storage project cost?

According to Usachev, the levelized cost of electricity (LCOE) of recently commissioned off-grid solar-plus-storage projects ranges from RUB14-22/kWh (\$0.19-0.29), which makes it much more economically viable, compared to net diesel generation. An off-grid PV plant built by Hevel Solar.

Is off-grid PV a viable alternative to diesel power generators?

Off-grid PV has become a much more viable solution than diesel power generators to bring electricity to Russia's remotest regions. Furthermore, solar-plus-storage is able to deliver with no interruption 24 hours per day and seven days per week, while fuel availability means diesel power can only ensure between four and seven hours per day.

What happens if the number of PV panels exceeds a threshold?

However, once the number of PV panels exceeds a certain threshold, the excess renewable energy cannot be utilized by the port, increasing the cost of power abandonment and causing the ROI to decline gradually.

What are the Roi trends for increasing wind turbines & photovoltaic panels?

The ROI trends for increasing wind turbines, photovoltaic panels, and energy storage devices vary across the different scenarios presented in this paper. Increasing the number of wind turbines and PV panels boosts renewable energy consumption at the port and lowers the cost of purchased power.



## Off-grid cost of photovoltaic containers used in Russian ports

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