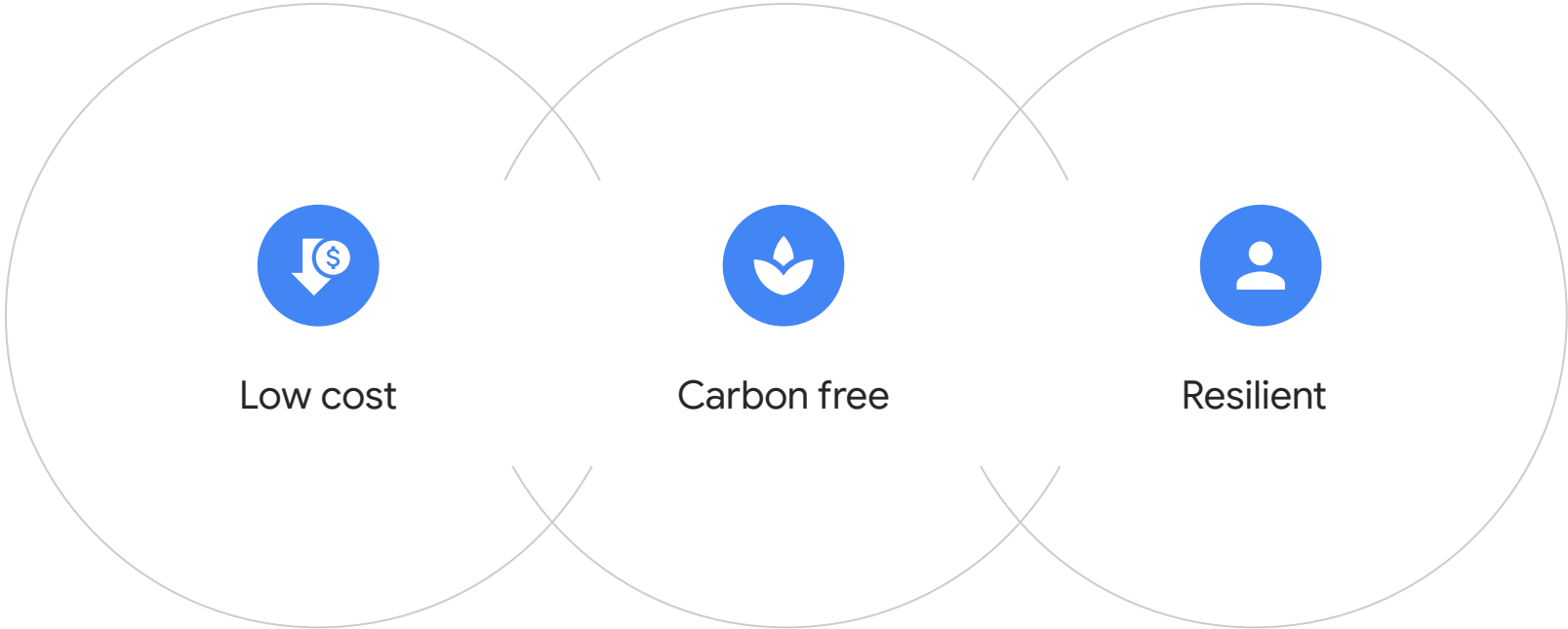
Google Search I'm Feeling Lucky

Products with >1 billion users

Electricity fuels data centers

Reliable electricity supply enables us to deliver Google services without interruption

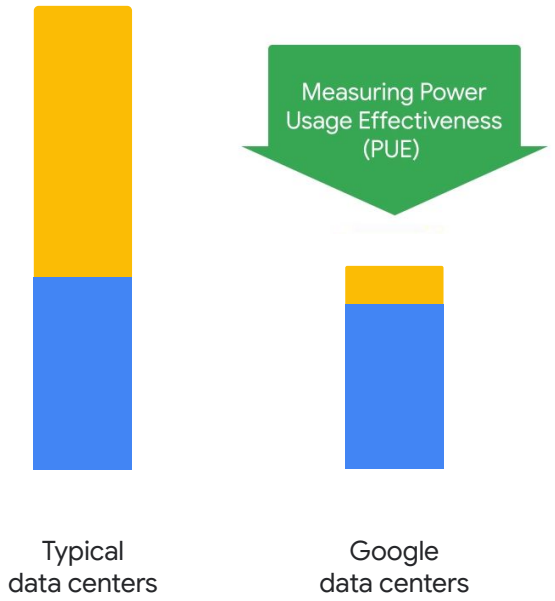
Our objectives



Google

Efficiency

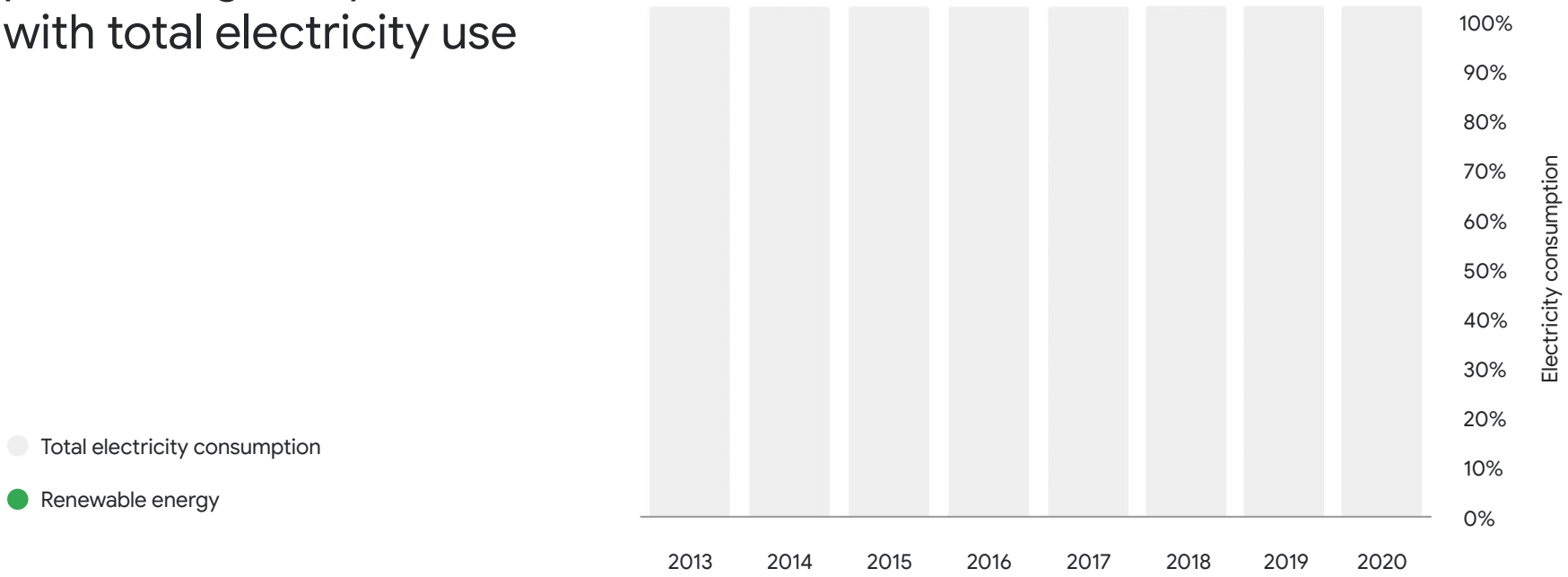
Google data centers are 2X more energy efficient than a typical data center



Servers Facilities

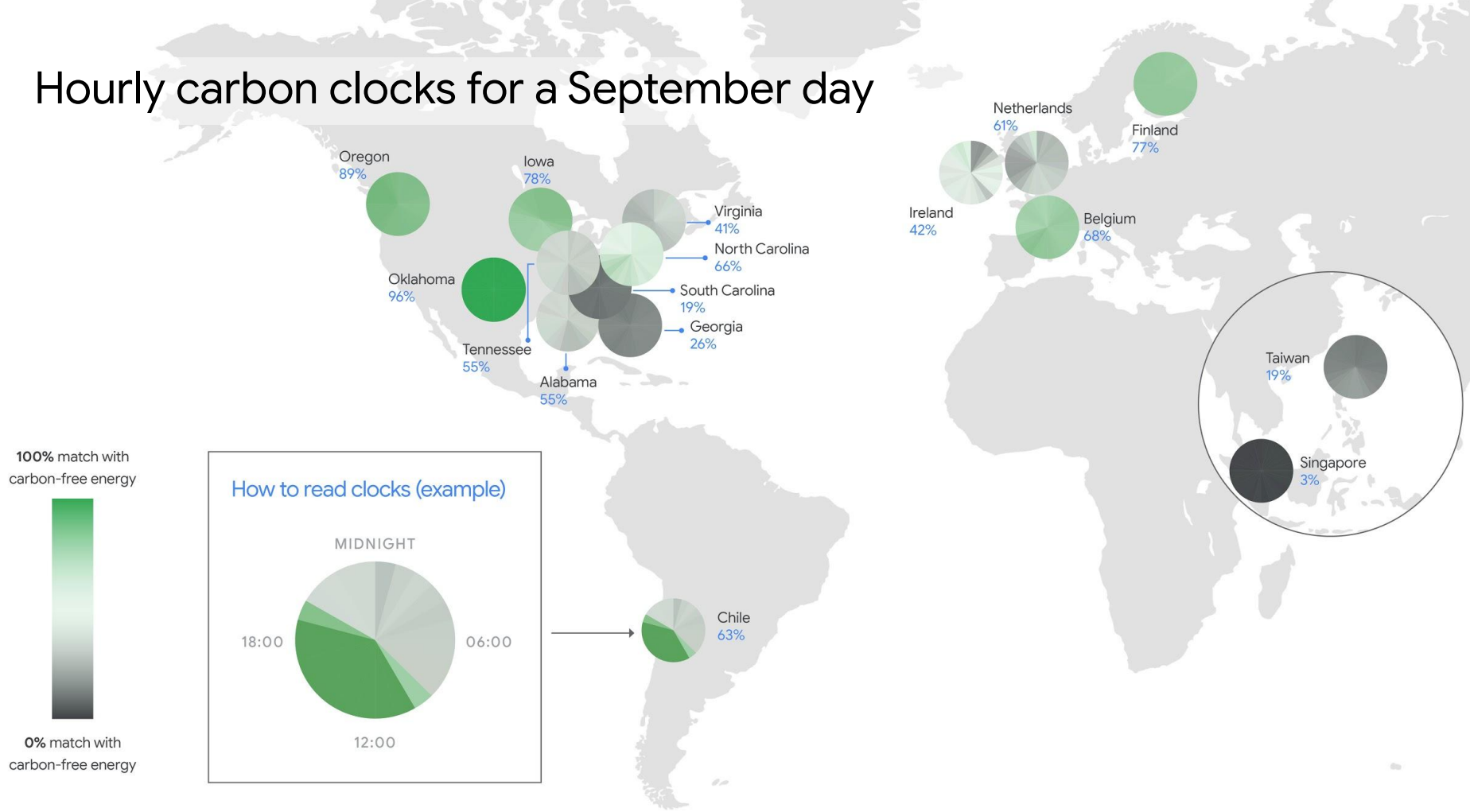
Google

Renewable energy purchasing compared with total electricity use



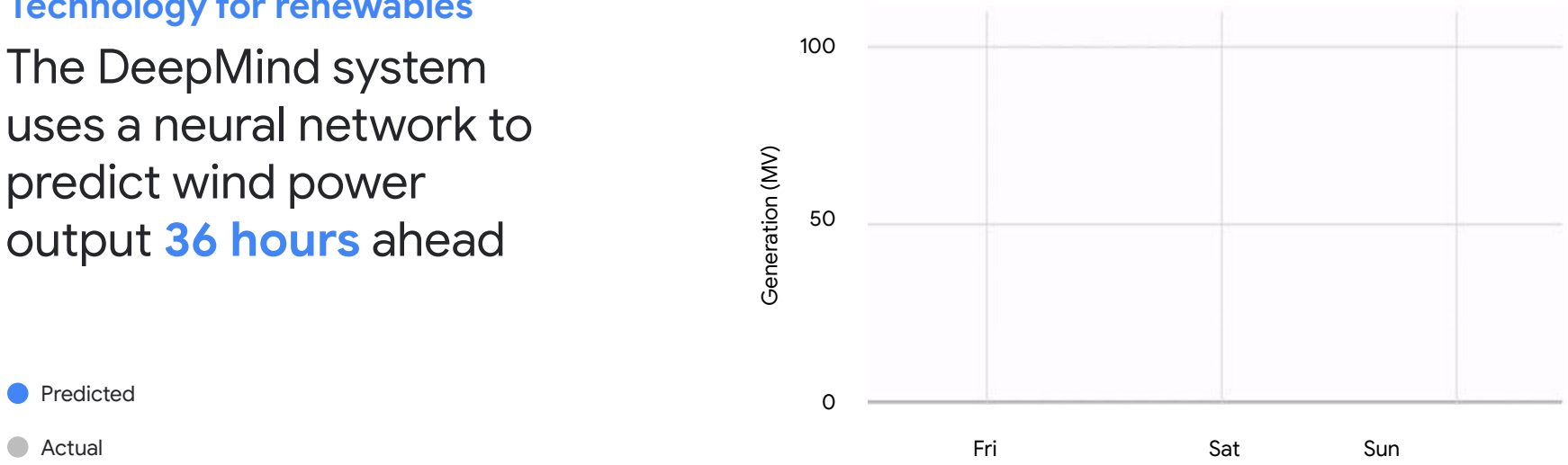
Google

Hourly carbon clocks for a September day



Technology for renewables

The DeepMind system uses a neural network to predict wind power output **36 hours** ahead



Google

Cleaner backup power to enable 24/7 CFE

First-ever

battery backup system for generator replacement at a hyperscale data center

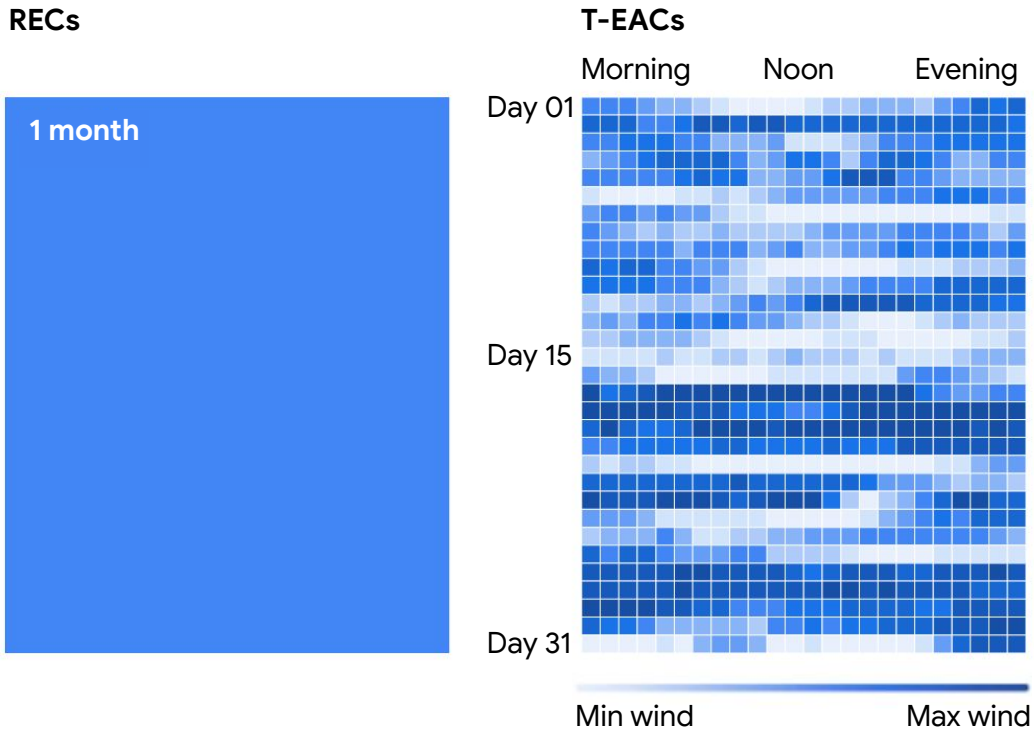
Flexible capacity

provided to grid, paving the way toward a clean energy future

A timely new approach for certifying carbon-free energy

Time-based Energy Attribute Certificates (**T-EACs**) incentivize production exactly when and where it's most needed

Google-contracted **wind** production in the Midwestern U.S.



Google

Carbon-intelligent load-shifting

Reducing data center carbon footprints by shifting flexible compute tasks to align with greener hours on the grid

Conventional compute load

Execution of compute tasks throughout the day, regardless of carbon impact

Google