



# Nevada New Energy Industry Task Force Distributed Generation and Storage TAC Presentation

May 2016

# STORAGE SUPPORTS THE TASK FORCE'S GOALS

1. Encourage development of clean energy sources and integrate renewable technologies into Nevada's energy sector
2. Foster the creation of a modern, resilient, and cost-effective energy grid
3. Support distributed generation and storage, with a specific focus on rooftop solar and net metering

## ENERGY STORAGE USES



PEAK SHAVING



CAPACITY FIRMING



LOAD SHIFTING

TRANSMISSION  
& DISTRIBUTION SUPPORT

DEMAND RESPONSE



SELF CONSUMPTION



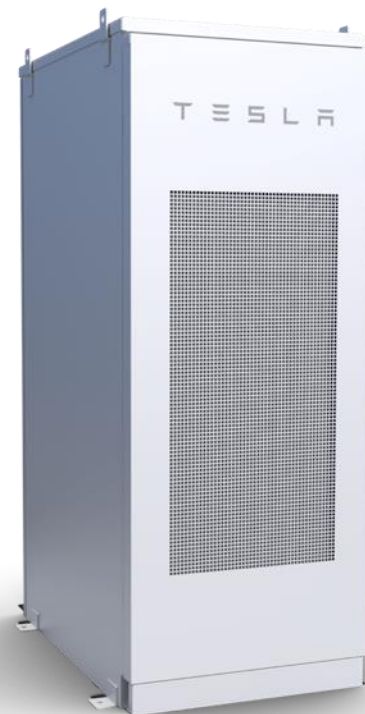
EMERGENCY BACKUP



MICROGRID



ANCILLARY SERVICES

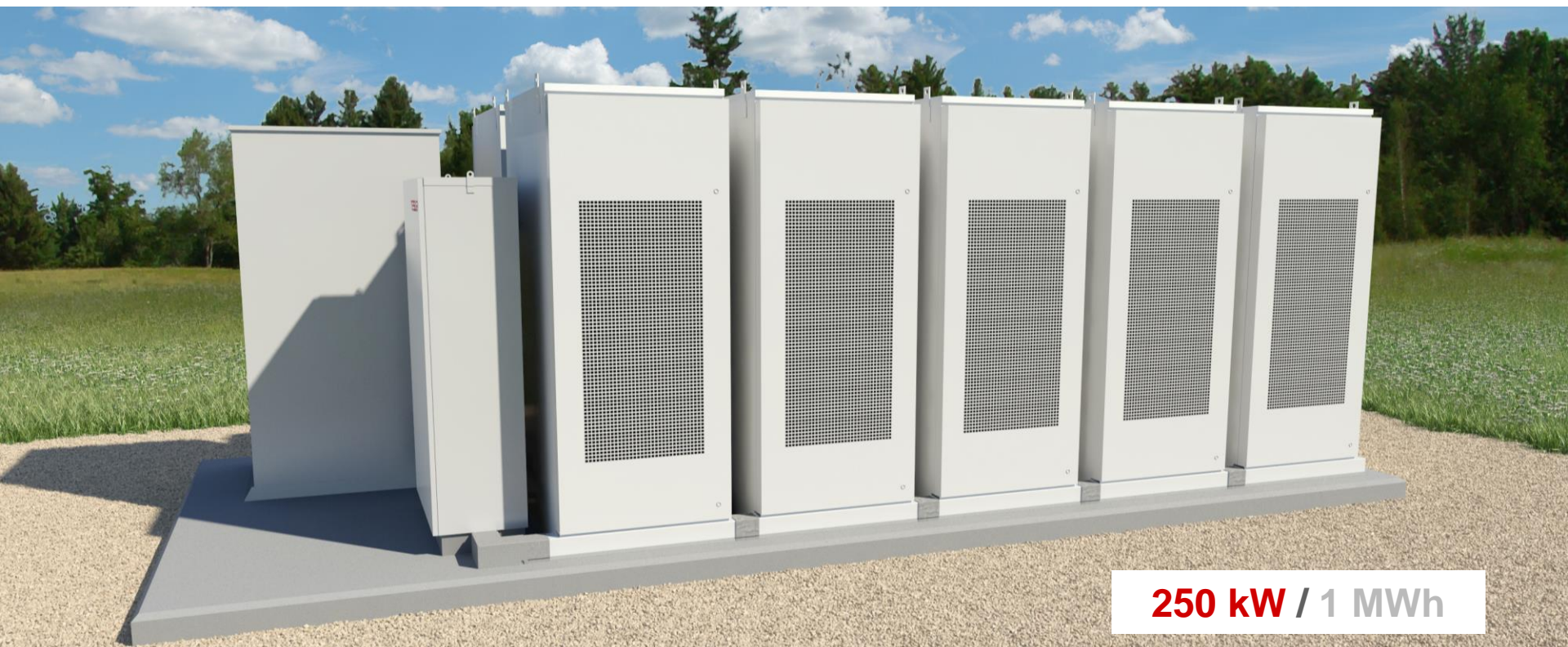


## RESIDENTAL INSTALLATION



**3.3 kW** / 6.4 kWh

# COMMERCIAL BUILDING INSTALLATION



**250 kW** / 1 MWh

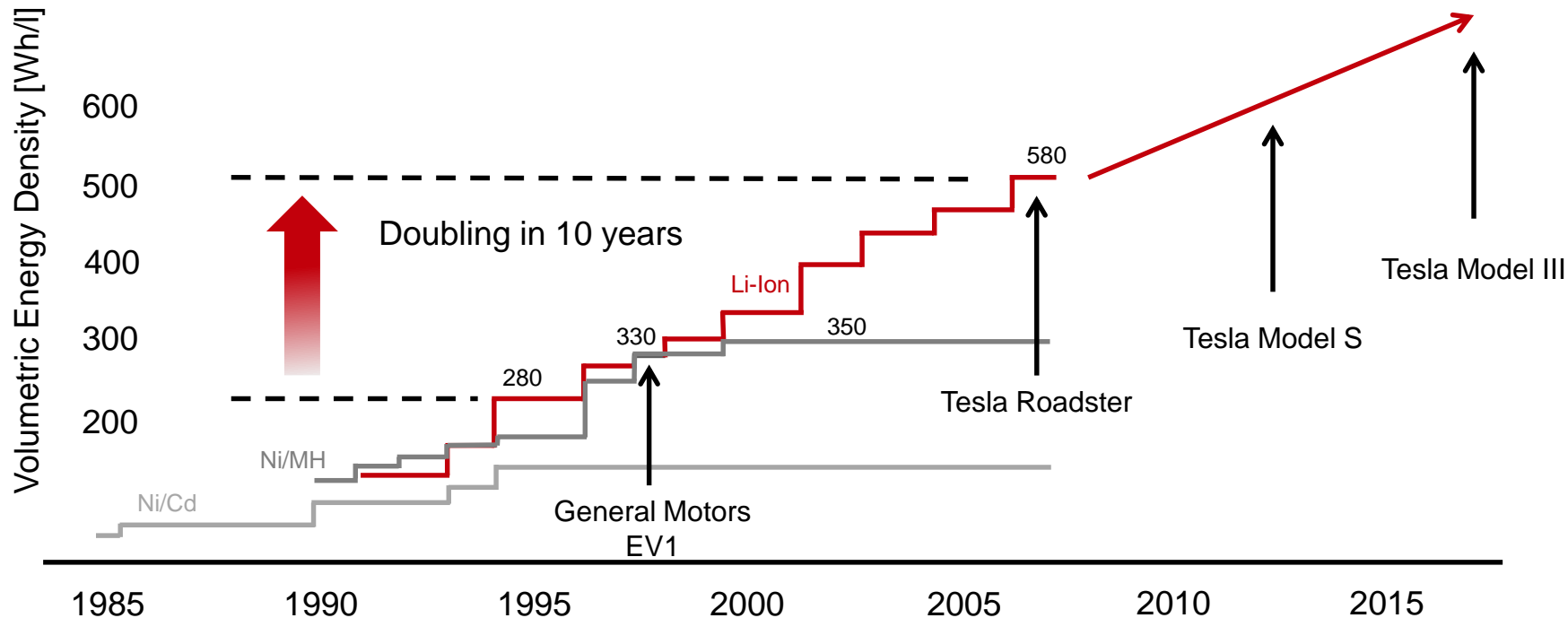


# UTILITY-SCALE INSTALLATION

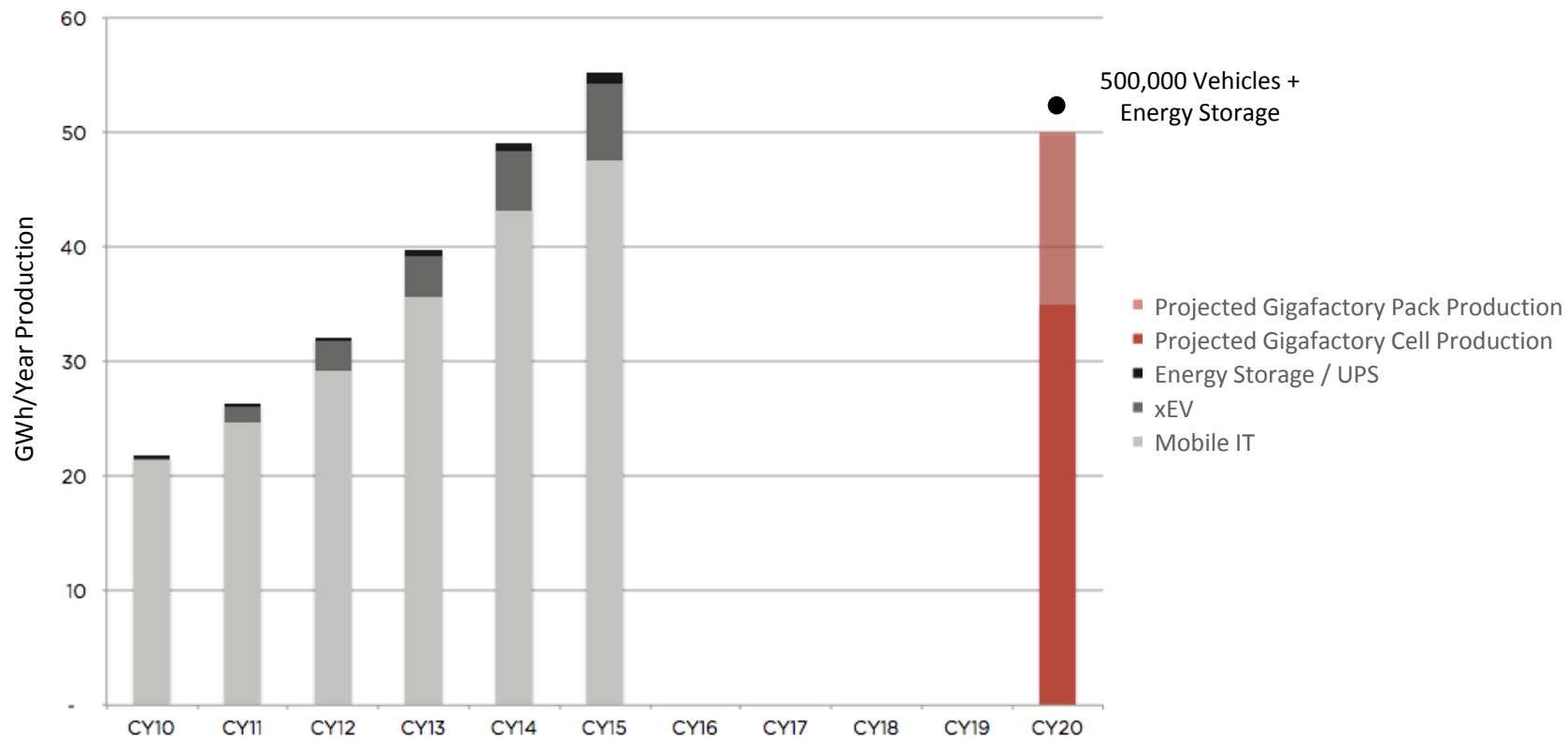


**13 MW** / 52 MWh

## BATTERY CELL ENERGY DENSITY TREND



## GLOBAL BATTERY CELL MARKET



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## GIGAFACTORY

50 GWh in annual battery production by 2020\*  
Enough for 500,000 Tesla cars  
Powered by renewable energy  
Net zero energy factory



\* Projected

# BARRIERS TO STORAGE DEPLOYMENT

Many utility processes and tariffs must be updated to accommodate storage:

- Planning (Generation, Transmission, & Distribution)
- Valuation
- Procurement
- Operations
- Rate design
- Interconnection

The first energy storage projects in a region have higher development costs because significant utility learning is required

# LEARN BY DOING

The best way to uncover which detailed processes and tariff language must be updated is to proactively deploy commercial energy storage projects at all points of the grid:


- Customer-connected
- Distribution-connected
- Transmission-connected



# POLICY TO CATALYZE STORAGE DEPLOYMENT

- All utility planning, procurement, and interconnection **procedures should be updated to consider energy storage**
- Policymakers should establish escalating near-term and medium-term **storage procurement targets** for the state's utilities
- A **cost-effectiveness provision** can allow utilities to defer their storage procurement if somehow they cannot find cost-effective projects

Existing storage  
procurement  
legislation

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- California's AB 2514 (2010)
  - Oregon's HB 2193 (2015)
  - Maryland's HB 787 and HB 821 (2016) (proposed)
  - New York's SB 7533 (2016) (proposed)



# QUESTIONS / DISCUSSION

