



# Solar in the Mining Industry

Kip Smith, Borrego Solar  
Alex Yager, Borrego Solar  
Dan Shepard, Thelen Sand & Gravel  
Craig Pals, Tick Tock Energy

# Current Solar Program

- Future Energy Jobs Act (FEJA) - 2017
  - Provided an avenue to successfully finance solar projects in IL
  - Created the Adjustable Block Program
  - Caused more solar companies to invest in IL
  - Created 3,900 clean energy jobs in 2017 alone



Source: Thelen Sand and Gravel



# Behind-The-Meter Solar

- Behind-The-Meter Solar = On-site solar that provides power directly to the customer's facility. It can be on the roof or on the ground.

Rooftop Solar System



Ground-Mount Solar System

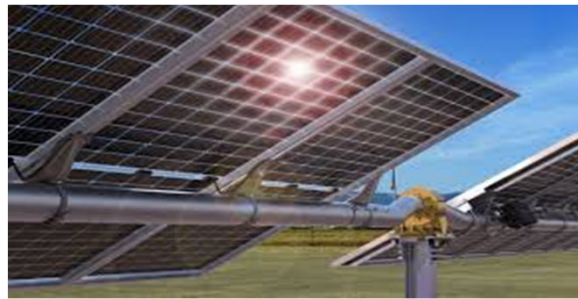


# Technological Advancements

- Technological advancements in have decreased the cost per watt of solar systems and made solar more eco-friendly



Single-Axis Trackers vs. Fixed-Tilt



Bi-facials



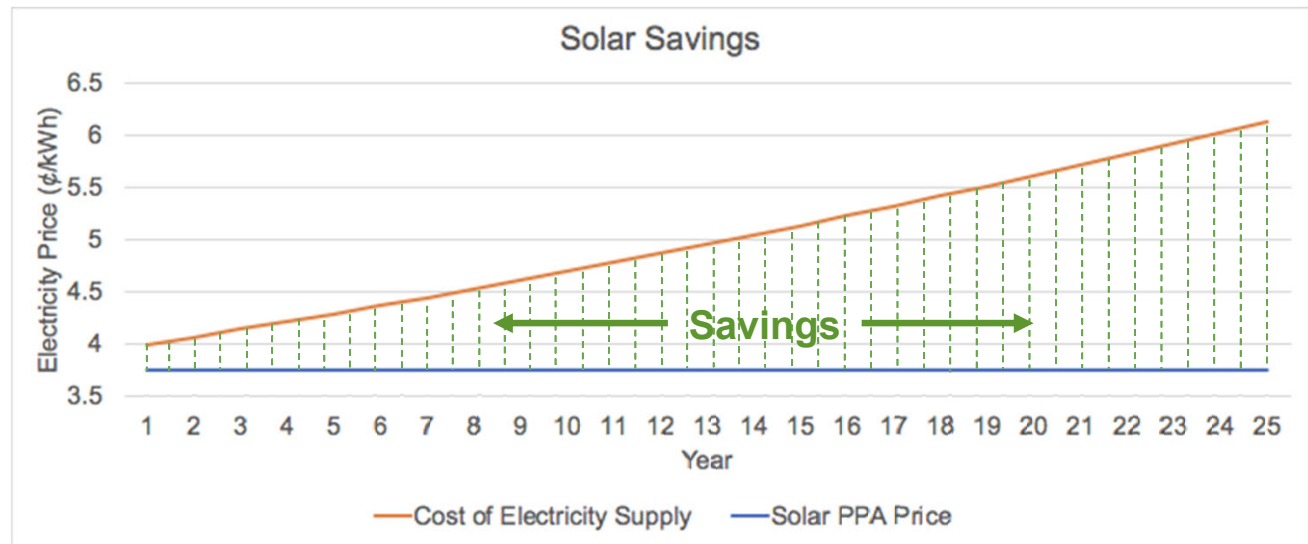
Storage



Solar cell chemistry - improving efficiency

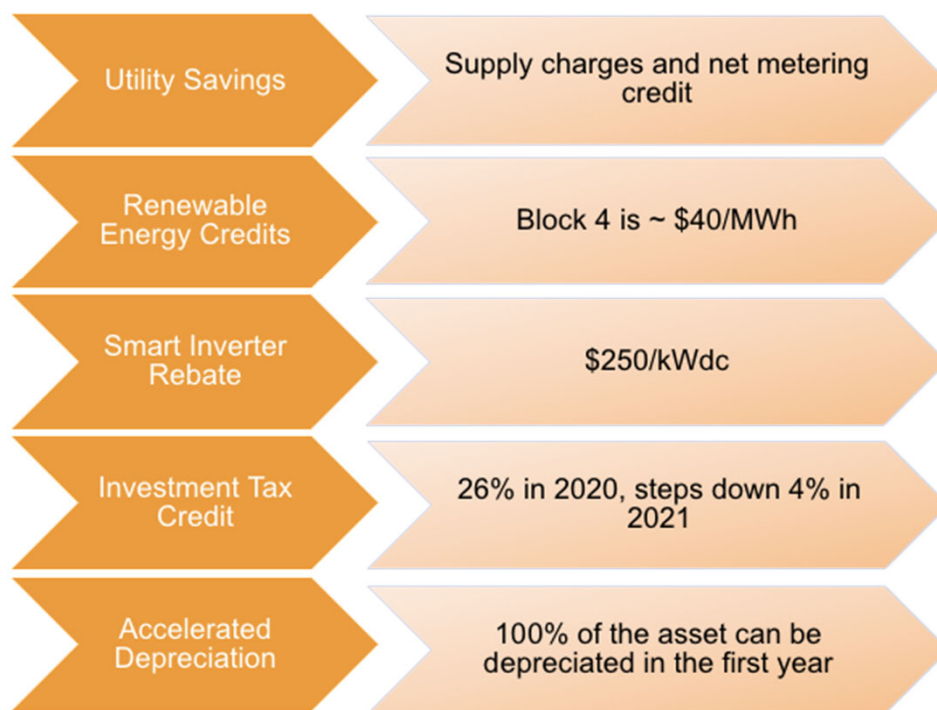
# Saving Money with Behind-The-Meter: Power Purchase Agreement

- No upfront cost
- Purchase electricity at a price lower than the current price of electricity
  - Can be fixed or escalate
- Electricity supply price estimated to increase about 1.5%-2% per year



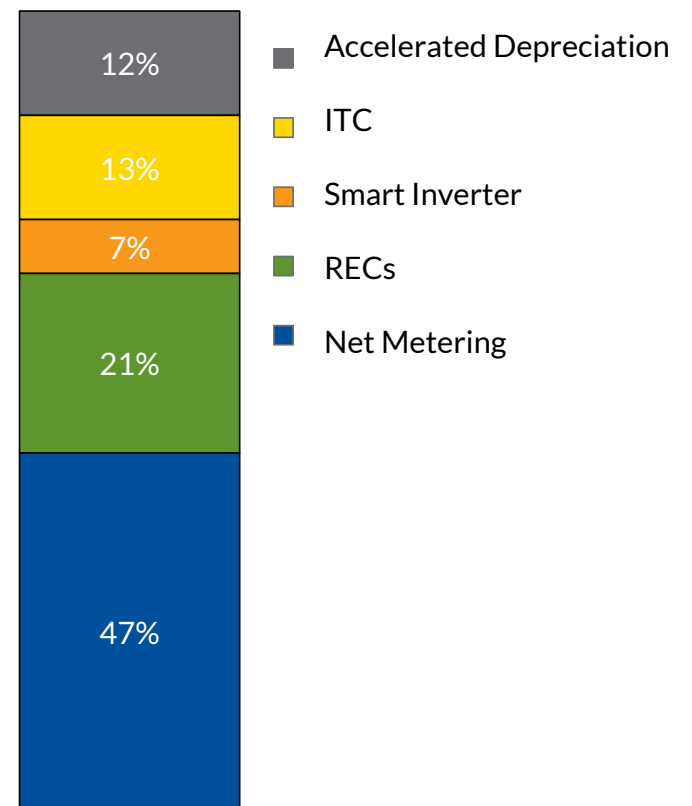
# Saving Money with Behind-The-Meter: System Ownership

- Pay for the system upfront
- Receive incentives from both the state and federal governments for owning the system
- Receive a Net Metering Credit when the system produces more energy than you're using



# System Ownership: Value Stack

- ~5 year payback period for 2 MWac
- ~\$4M paid upfront to develop and install the system
- ~\$3M profit
- ~7M cumulative savings



# Next Steps

