Xcel Energy MN Solar*Rewards Community

Managing the largest community solar garden program in the nation

11/8/2017

Agenda

- Xcel Energy renewable footprint
- Minnesota Solar Garden Creation
- How S*RC Works
- How S*RC is managed
- Resources & Tools
- Current Snapshot
- Q&A

Xcel Energy's Renewables

Reduce CO_2 Emissions

45%

On track to reduce CO_2 emissions 45% by 2021

#1

The nation's #1 utility wind energy provider for over a decade

National leader in renewable energy choices

25%

Renewable Resources

Nearly 25% of the electricity all customers receive comes from renewable sources

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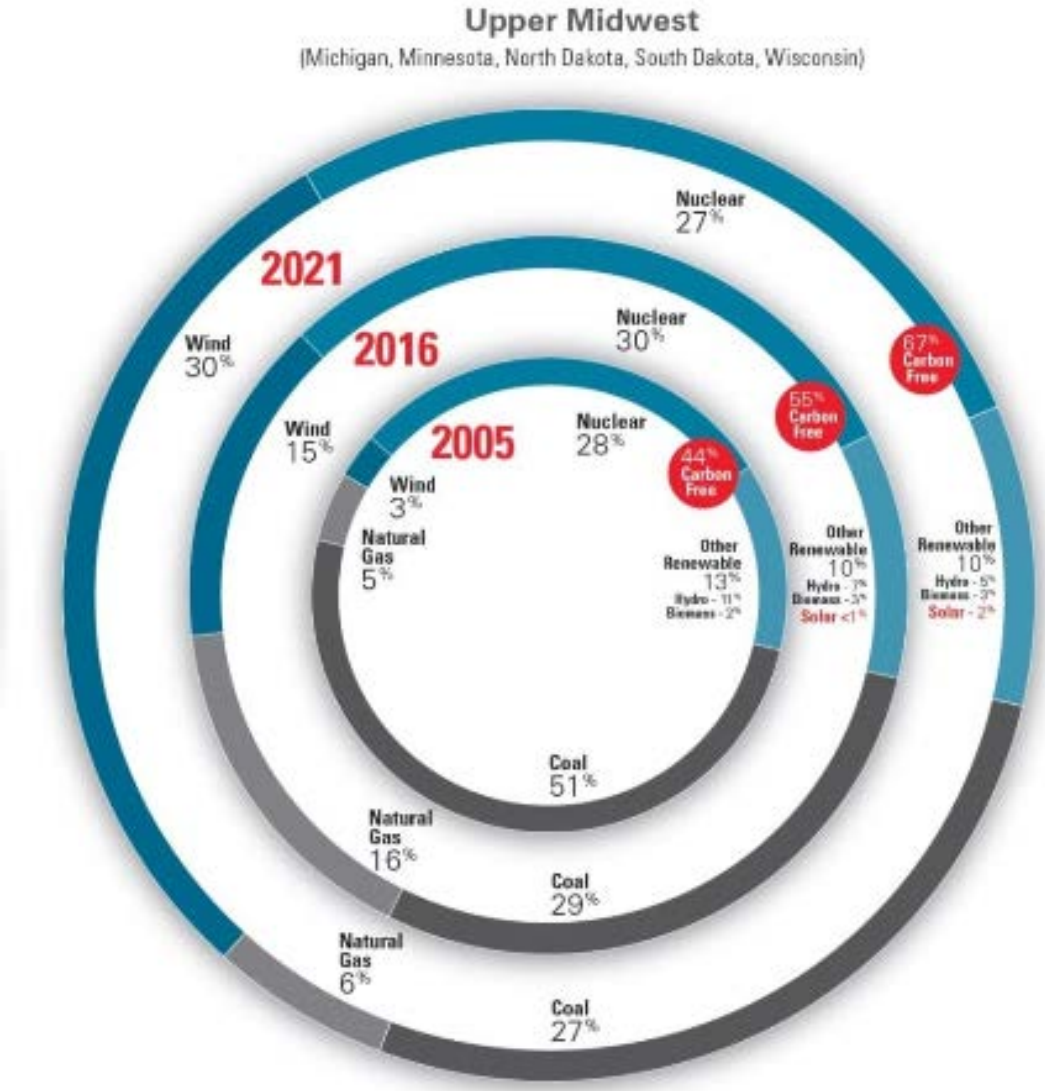
Our Changing Energy Mix



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What is a Community Solar Garden?

- **Community Solar Gardens** are locally-located solar photovoltaic (PV) systems that are interconnected directly to the distribution system and provide renewable energy to all customers. In exchange for that energy, subscribing customers are provided monetary credits on their bill that can be used to offset certain electric charges.

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Minnesota Solar Gardens Creation

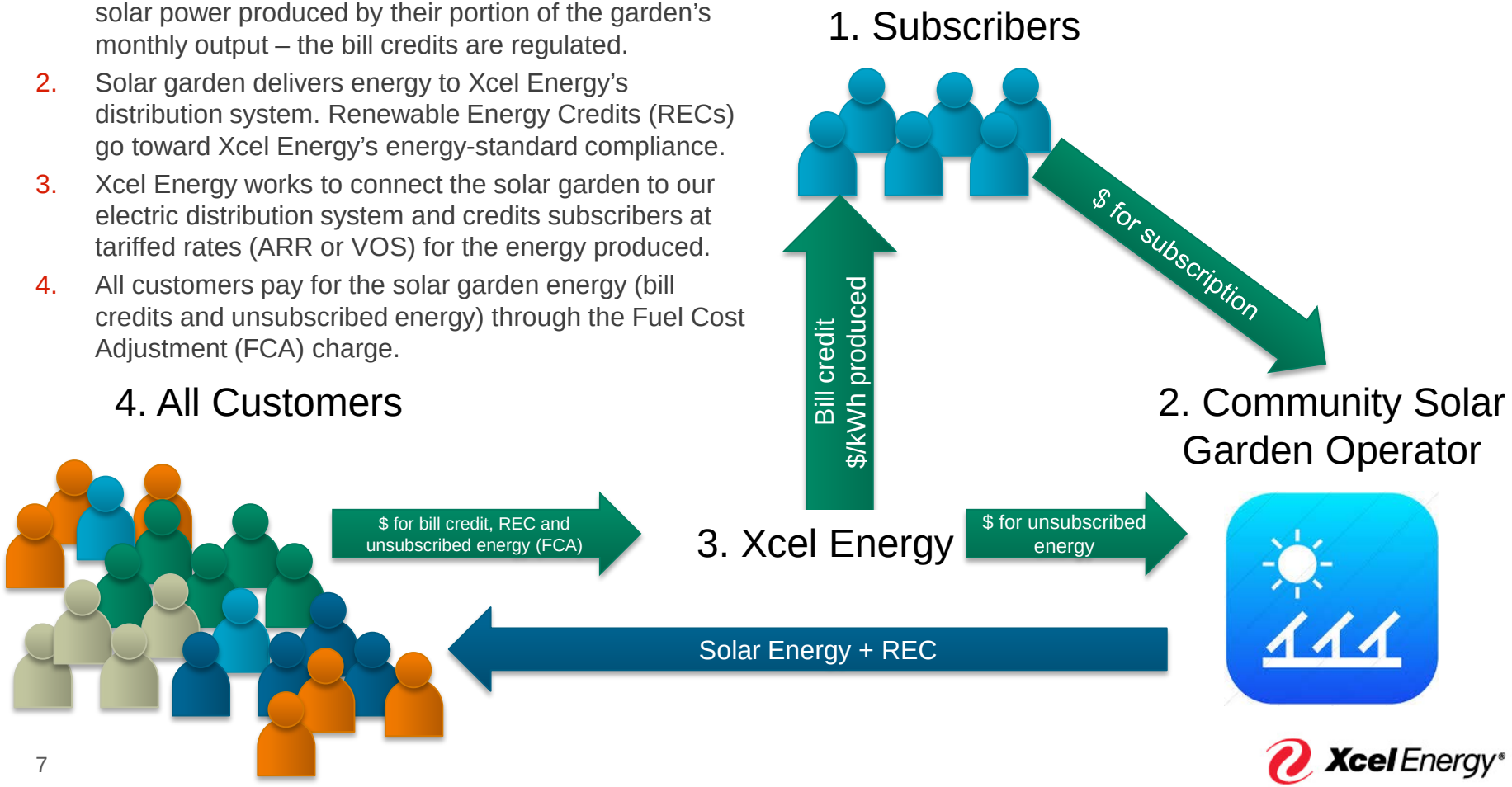
- The Legislative Mandate in 2013
  - Uncapped Program of 1 MW Gardens
  - Minimum of 200 W subscription and 120% rule
  - Minimum of 5 subscribers
    - Each must be less than 40% of Garden size

- The PUC Process
  - Net Metering Pricing Equivalent
  - Transition to Value of Solar
  - Co-location of 5 MW

- The Program Creation at Xcel Energy
  - Tariff proposal
  - SalesForce Tool
  - External Stakeholder Working Groups
  - Collaborative approach

How MN Solar*Rewards Community Works

1. Subscribers pay the solar garden for their subscription – subscription costs and terms vary, are not regulated and are between the solar garden and the subscriber. Subscribers receive Xcel Energy bill credits ($/kWh) for solar power produced by their portion of the garden's monthly output – the bill credits are regulated.
2. Solar garden delivers energy to Xcel Energy's distribution system. Renewable Energy Credits (RECs) go toward Xcel Energy's energy-standard compliance.
3. Xcel Energy works to connect the solar garden to our electric distribution system and credits subscribers at tariffed rates (ARR or VOS) for the energy produced.
4. All customers pay for the solar garden energy (bill credits and unsubscribed energy) through the Fuel Cost Adjustment (FCA) charge.



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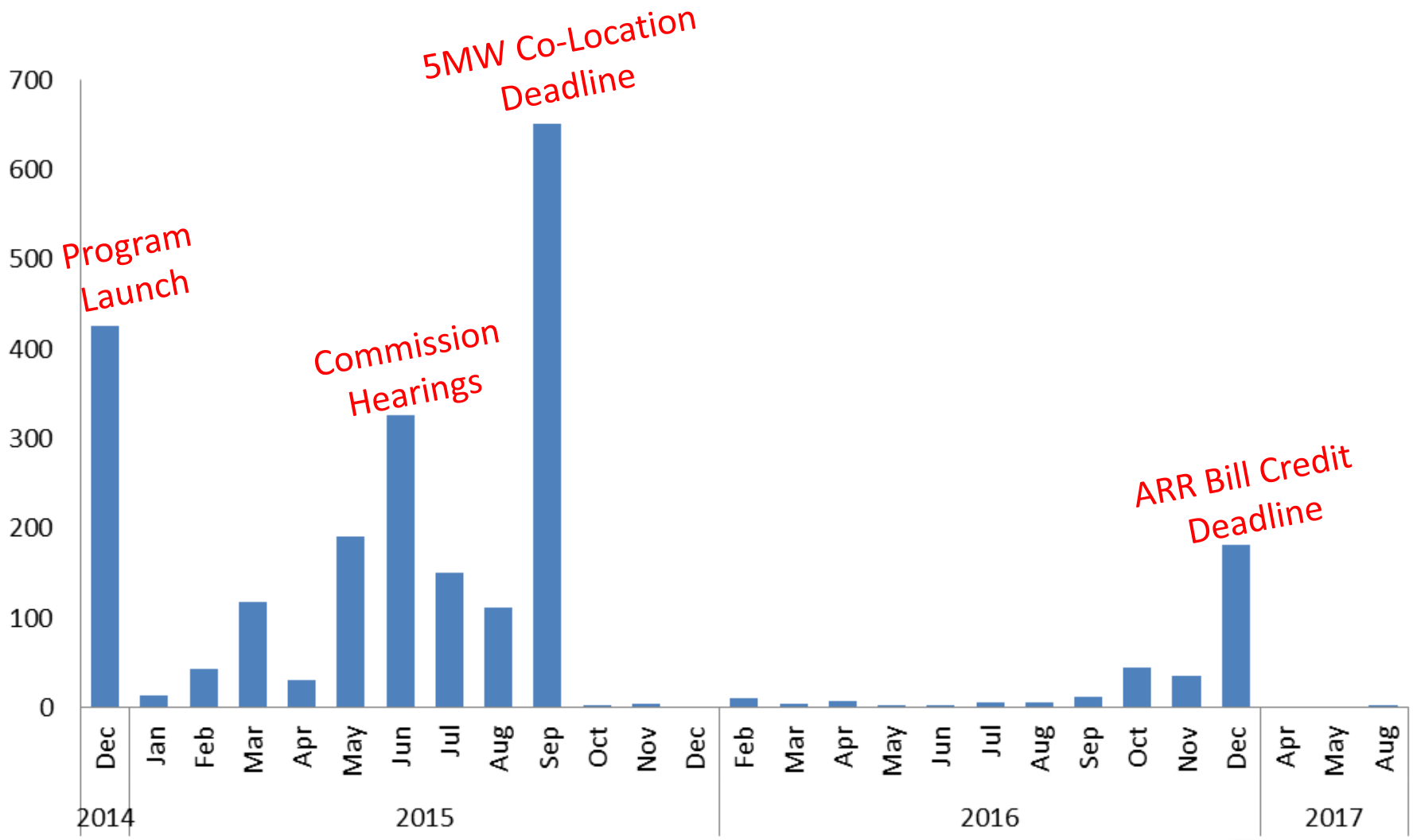
Application Timeline



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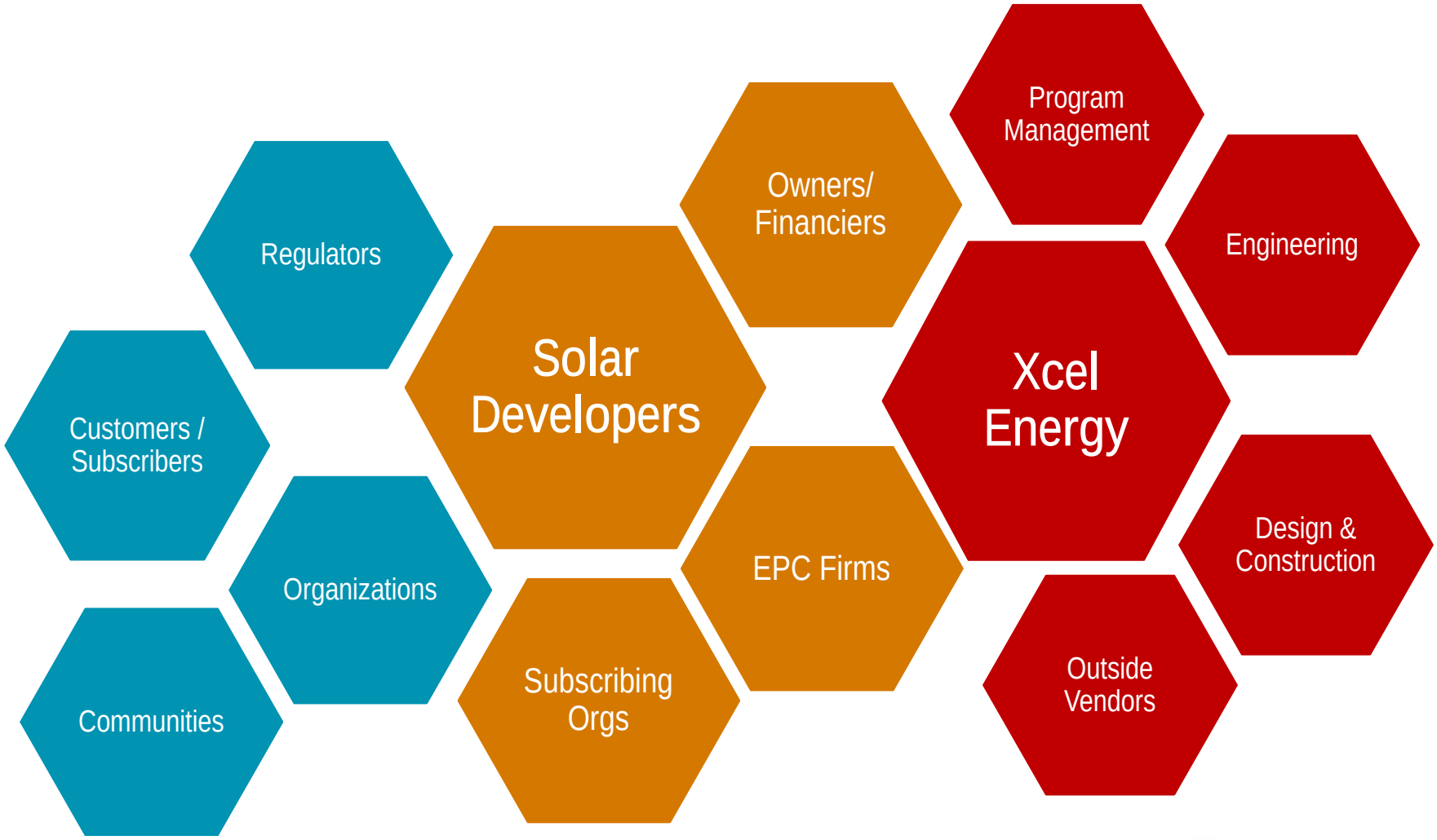
It Takes a Village …



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Application Management System

- Easily accessible secure internal and external interface
- Available on Web or mobile device
- Transparent, time-stamped applications
- Common platform among solar options
- Source of record for developer application process
- Developer access portal provides instant status checks
- Robust, customizable reporting
- Online secure signatures and payments
- Developer-driven subscriber management for gardens

Processes & Tool Evolution

- Sample site drawings & Engineering Checklist
- Waitlist Process
- Queue Management
- Simultaneous Studies
- Telemetry Solution
- Ground Referencing Documentation
- Engineering Study Requirements
- PV Operating Guidelines
- Screening Tool
- Voltage Fluctuation Thresholds Using IEEE 1453 Methods
- Commissioning Guide Documents

Minnesota Solar*Rewards Community®

Status Report | November 1, 2017

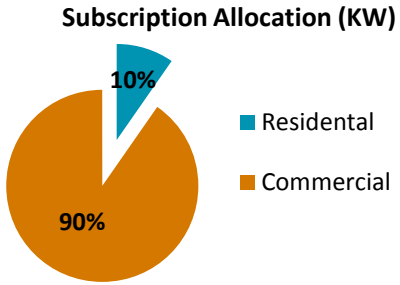
PROJECT STATUS

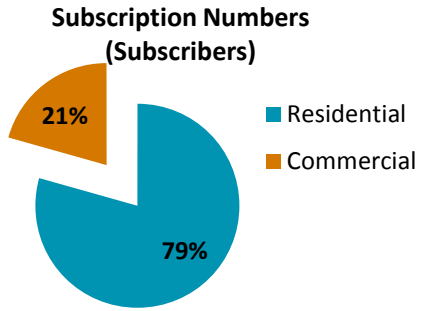
- New Applications (2017) = 34
- Withdrawn projects = 1,493 MW
- 299 active projects (614 MW)

November 1, 2017	Project Sites	MW
↓ PROGRESS SUMMARY ↓		
Application Stage	32	31
Study Phase	79	115
Waiting for Study Proposal	0	0
SOW Waiting for Developer	19	19
In process	9	8
Interconnection Agreement Issued	51	87
Design Development	114	192
Construction Phase	74	277

COMPLETED PROJECTS / SUBSCRIPTIONS

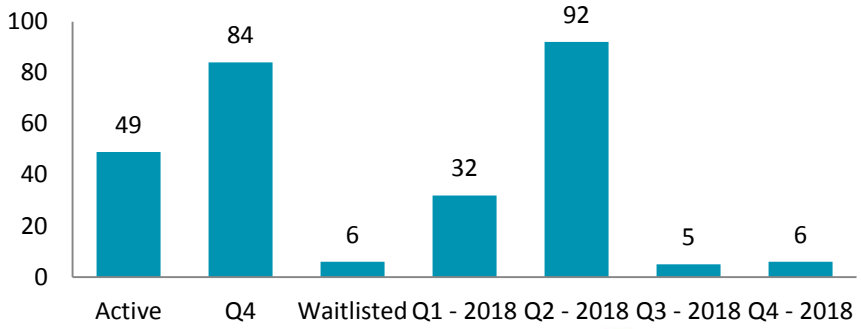
- 49 projects in-service to date for 168 MW
- Approximately 2,600 subscriptions (premises)
- 90 percent of capacity allocated to commercial customers
- 10 percent of subscriptions are residential
- $2.2 million paid out in subscriber bill credits during September





DESIGN & CONSTRUCTION

- 469 MW Total in Design & Construction
- 295 MW requesting completion by YE 2017; 18 MW Waitlisted for 2017
- Table below represents sites' currently scheduled in-service dates



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Kasota, MN
Center City, MN
Minneapolis, MN

Questions & Discussion

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