

## Small Group Prioritized Strategies and Technologies from Stakeholder Meeting #1

**Bold and underlined** signifies a discussion brief is being prepared for this technology/strategy

### *Group 1: Mobility Transportation and Fuels*

#### TOP STRATEGIES – Round 1

- **Modernizing parking infrastructure policy to reduce VMT**
- Regionally coordinated mass transit
- Production of advanced biofuels
- Increased adoption of PEVS
- City / Corporate fleet adoption to alternate/ low emission fuel vehicles
- Ensure PEV charging is clean

Added Options:

- **Electrification of mass transit**
- Densify land use
- Promote telecommuting
- More bike adoption
- Alternative to car ownership
- Capture Organics from waste for anaerobic digestion for use as advanced biofuel
- Self-driving cars/ buses

Grouping of technologies/strategies suggested by the group:

- Regionally coordinated mass transit (and transportation)/electrification of mass transit/densify land use/alternatives to car ownership/promote telecommuting/more bike adoption (overall reduce VMT strategy)
- Production of advanced biofuels/capture organics from waste for anaerobic digestion for use as advanced biofuel (overall biofuels strategy)
- Increased adoption of PEVs/electrification of mass transit (overall electrification strategy)

#### TOP STRATEGIES – Round 2

- **Modernizing parking infrastructure policy to reduce VMT**
- **Ensure plug-in electric vehicle (PEV) charging is clean**
- **City / Corporate fleet adoption to alternate/ low emission fuel vehicles**
- Increased adoption of PEVS
- Regionally coordinated mass transit
- Production of advanced biofuels

Added Options:

- Transportation pricing, including congestion, pollution, land use
- EVs for autonomous vehicles as DR
- EVs as demand response tech
- Pay as you drive insurance

- Regional rail
- Autonomous vehicles for VMT reduction

Grouping of technologies/strategies suggested by the group:

- Autonomous vehicles/EVs for autonomous/EVs for autonomous for demand response
- Increase PEVs/ensure PEVs are clean

## *Group 2: Energy Supply & Grid Modernization*

TOP STRATEGIES – Round 1

### **Integrated grid**

- 1) DER management
  - a. **Forecasting and analytics**
  - b. Coordination of resources
- 2) DER resources
  - a. Supply-side efficiency (e.g. conservation voltage reduction (CVR))
  - b. Demand response
  - c. Coordination with major uses
    - i. CHP and water treatment and distribution
  - d. Distributed generation
  - e. storage
- 3) Pricing and business models

TOP STRATEGIES – Round 2

- Communication and metering infrastructure
  - o **Smart inverters and smart meters**
  - o **Two-way communication**
- **Distributed generation**
- **Energy storage** (see: [UMN Energy Storage Summit presentations](#) and [overview](#))
- Pricing mechanisms and tariffs
  - o **Green tariffs**
  - o Equity for customers
  - **More customer options**

## *Group 3: Buildings Efficiency & Thermal Energy*

TOP STRATEGIES – Round 1

- **Behavioral strategies in building operation**
  - o **More analysis on whether existing strategies are working, more data.**  
Determine what would work better to improve programs and persistence in savings

- (see May 2015 [behavioral study for MN Commerce by Illume](#) )
  - o Green leases with energy budgets
  - o Incentives to value reduction/social cost of carbon
  - o SB 2030 districts
  - o Building energy use disclosure when you sell the building
- Distributed Generation in and on buildings and other facilities (CHP, solar PV)
  - o Need better regulatory framework (*eg. incorporating CHP* into CIP/utility cost-effectiveness framework)
  - o Financing
  - o More uniformity between utilities on interconnection of electric DG (solar PV, CHP)
- Scale EE in new buildings
- **Combined Heat & Power (CHP)**
  - o (see [MN Commerce CHP Action Plan](#) )
- **Data needs:**
  - New Buildings: Market characterization studies: Need data on potential market for new vs. existing buildings, and by when. (see: [Architecture 2030](#)).
  - New buildings: What is the delta between existing codes and energy reduction potential from higher codes – accounting for less than 100% compliance (see: EQB [CSEO study](#) of policy option: “SB2030/Zero Energy Transition/Codes”)

## TOP STRATEGIES – Round 2

- **Scale EE in existing building**
  - o Seek out underserved markets
    - Small commercial
    - Multifamily
    - Agricultural
    - Mid-sized industrial
  - o Increase use of automation and controls
  - o Better access to data and incentives to keep it/use it
  - o Focus on electric v. whole building
- Behavioral strategies in building operation
  - o Time of use rates/other rate structures
  - o O & M
- Distributed Generation in and on buildings and other facilities (CHP, solar PV)
  - o Add renewable thermal and CHP on buildings or other facilities
  - o Waste heat capture
  - o Reduce water usage (energy/water nexus)
  - o Integrate buildings with an advanced grid (thermal and electric)
- Scale EE in new buildings

## *Group 4: Industry and Agriculture*

### TOP STRATEGIES – Round 1

1. **Deploy combined heat and power (CHP) (not limited to industry)**
2. **Commercialize advanced biofuel production & biobased chemicals**
  - a. Should have biofuels and chemicals together – production of both at same facility improves project economics.
3. Capture organic feedstocks (ag, food processing, crops, residential and commercial food waste) through AD
4. Deploy end-use efficiency in industrial settings

### TOP STRATEGIES – Round 2

1. Commercialize advanced biofuel production & biobased chemicals
2. **Deploy combined heat and power (CHP)**
3. Deploy end-use energy efficiency in industrial and agricultural settings

## *Group 5: Energy & Climate Planning and Action*

### TOP STRATEGIES – Round 1

1. **Local government energy and climate planning and action**
  - a. Green Step Cities
2. State-level planning on energy and climate
3. Planning and action to increase resilience to climate change
4. Reform the electric utility business model: e21
5. Comprehensive, long-term financing/funding: PACE, Green Banks

### TOP STRATEGIES – Round 2

1. Reform the electric energy utility business and regulatory model
2. Cluster organization that's innovation focused
3. Externality valuation system – monetized
4. Broader access to renewable energy
5. Corporate commitments to energy & climate
6. Price of energy
7. Local government incorporate energy and climate into planning, operation and activities
8. Continued state-level planning on energy and climate
9. New for-profit business models