

Putting it Together—Power by the People

Presenter: Mike Gordon

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CEO Joule Assets, Inc.*

Guests: Community Leaders

March 11th, 2015



Overview

- ü Sustainable Westchester Overview
- ü One Route Forward
 - ü Community Choice Aggregation (“CCA”)
 - ü Property Assessed Clean Energy (“PACE”)
 - ü Next Community Empowerment Steps
 - ü Micro-grids
 - ü Renewable Generation
 - ü Energy Efficiency
 - ü Reforming the Energy Vision (“REV”)
 - ü Action Items & Time-line

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Sustainable Westchester Snapshot (1)

About Sustainable Westchester

- Sustainable Westchester is the expression of local governments' determination to turn our environmental challenges into opportunities to improve the quality of life, economy and future prospects of the citizens of the county. It brings grass roots and municipal forces together to achieve concrete change.

Our Mission Statement

- Sustainable Westchester is a consortium of Westchester County local governments that facilitates effective sustainability initiatives, engages community stakeholders, and shares tools, resources, and incentives to create more healthy, vibrant and attractive communities, now and in the future.

Sustainable Westchester Snapshot (2)

- 42 of the 43 Westchester municipalities
- Representing roughly 900,000 people
- Each municipality pays annual membership dues
- The Board of Directors is balanced: 6 private sector and 6 Mayors/Supervisors
- Co-chairs: Chris Burdick (Bedford Supervisor) & Mike Gordon
- Co-Vice Chairs: Mike Spano (Yonkers Mayor) and Nancy Seligson (Mamaroneck Mayor)

Sustainable Westchester Snapshot (3)

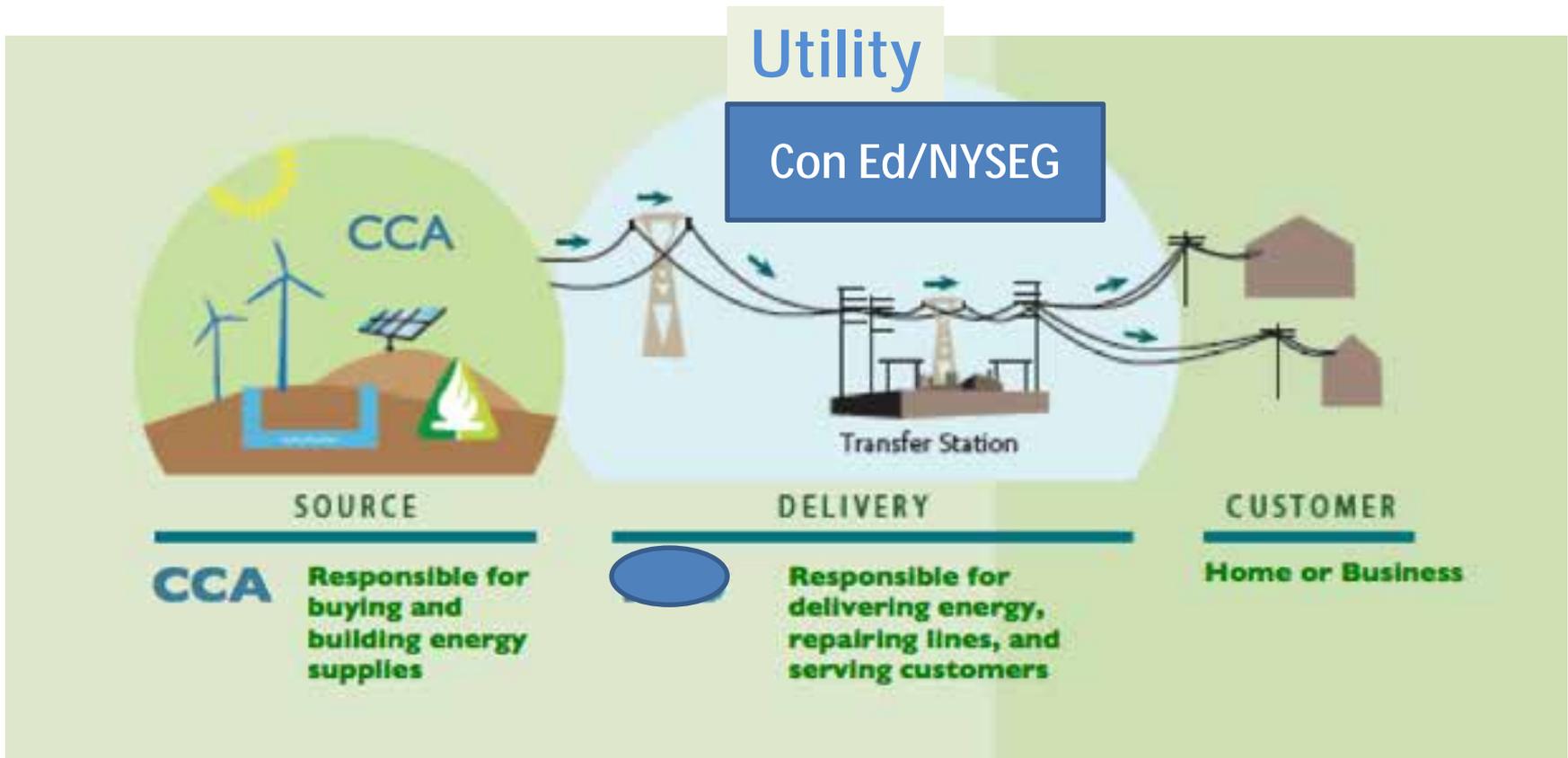
- Launched Energize, continues engagement as contractor
- Supported the development of EIC
- Developed several micro-grid plans
- Passed Community Choice Aggregation
- Passed first and numerous Complete Streets ordinances
- Supported the launch of Solarize, continues engagement as contractor
- Deeply engaged in the Mid-Hudson Regional Planning process
- Conducting numerous grass roots, citizen action, outcome-oriented committees, including
 - Transportation/Land Use
 - Solid Waste
 - Food and Agriculture
 - Energy

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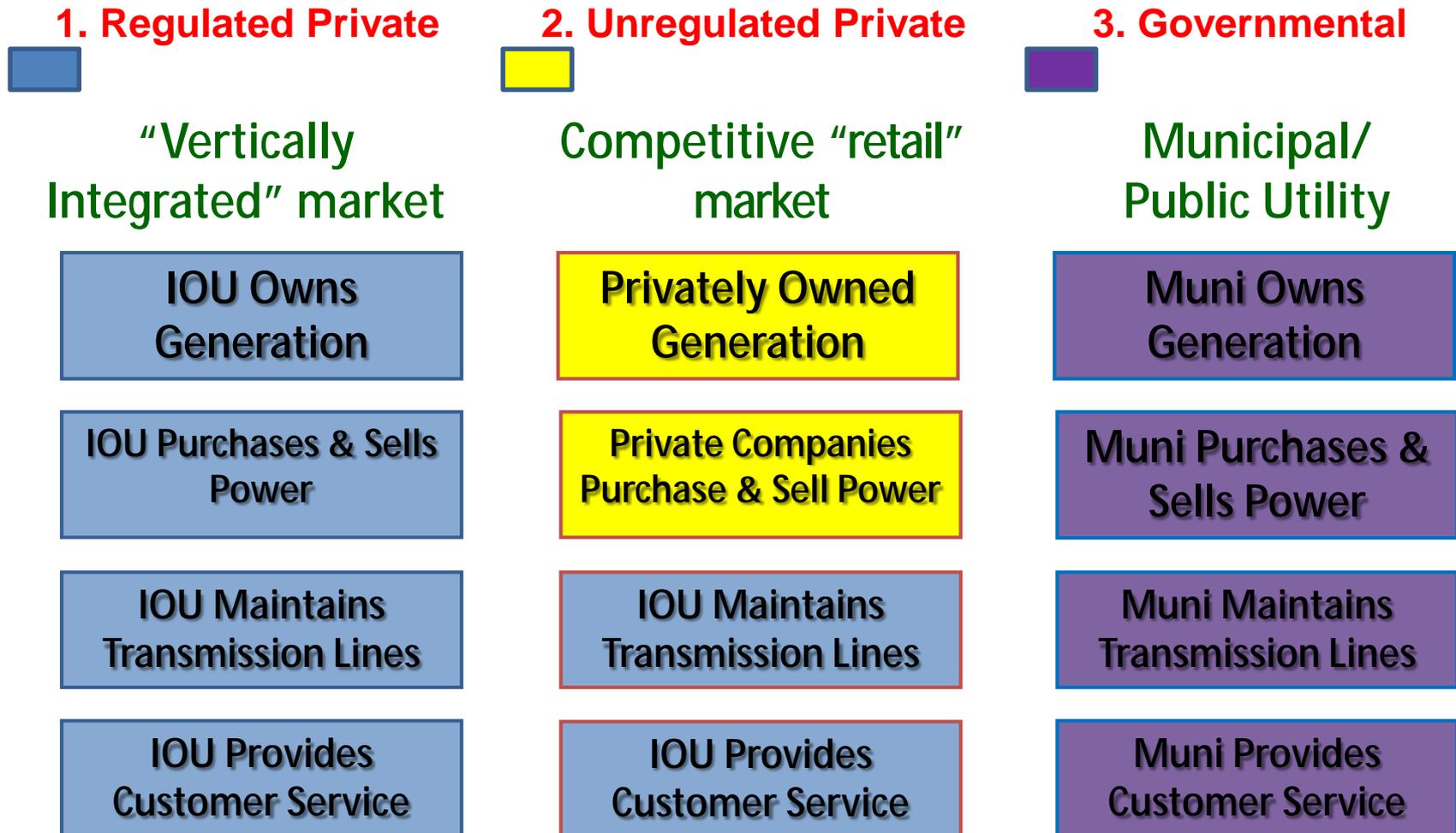
WHAT IS CCA?

CCA allows municipalities (counties?) to pool their residential and business electricity loads & gas consumption, and to purchase power on their behalf. Energy transmission, distribution, repair and customer service functions remain with the incumbent utility.



NY—A HYBRID APPROACH

- Three market structures: 1. The utility does, and owns, everything, 3. The Municipality does and owns everything, and 2. **Competitive “retail” markets are a hybrid market structure where key energy functions are split between regulated and unregulated entities.**



CCAs in Westchester

CCA fits into the hybrid market & adds market clout (buying on behalf of all consumers who do not opt out of CCA). In any market, there's a default provider. CCA changes who that is: from IOU to CCA

 CCA contracts with one competitive supplier & can add services

“Vertically
Integrated” market

IOU Purchases
Power

IOU Maintains
Transmission Lines

IOU Provides
Customer Service

Competitive “retail”
market

CCA Aggregates
Power Purchase

IOU Maintains
Transmission Lines

IOU Provides
Customer Service

Non-Profit/IMA
Adds Features

Municipal/
Public Utility

Muni Purchases
Power

Muni Maintains
Transmission Lines

Muni Provides
Customer Service

Additional Value?

#1: STABLE RATES & COST SAVINGS

NY: Pilot; Sustainable Westchester approval requires either:

Floating rates with discount commitments or

Fixed rates that are lower than trailing average (12 months)

IL: Initial 25% savings off Utility rates (rate gaps narrower now)

MA: Average 6% lower rates for default supply; small premium for 100% green

Additional Value?

#3: INJECTION OF DOLLARS, BEYOND SAVINGS, INTO LOCAL ECONOMIES

- Westchester County demonstration for other municipalities in the state; any municipality in the state may submit for a demo, today:
 - Opportunity to direct a portion of \$1.5 billion in annual spend, toward local power supply
 - Tax relief
 - Enhanced investment in, and value prop for, micro-grids, local renewable generation and energy efficiency

What's Happening in New York?

ü Regulatory

ü Department of Public Service

ü Allows Westchester municipalities (administered by Sustainable Westchester) the freedom to implement “opt-out” structures

ü Link to PSC Order and PSC-issued news release (items 3 and 4, when you click through):

<http://documents.dps.ny.gov/public/MatterManagement/CaseMaster.aspx?MatterCaseNo=14-M-0564&submit=Search+by+Case+Number>

ü Promulgating regulations for the rest of the state, while inviting other communities to submit similarly well thought out demonstrations to the Agency, for similar approval

ü Sustainable Westchester

ü Orienting communities & seeking municipal resolutions

ü Attorney General

ü Will provide “Advisory Opinion” re whether a referendum will be required after a municipality’s governing body has passed a resolution

Action Items & Time-line?

ü Akin to locking in a mortgage rate

- ü Set your preference, then wait till the rates get to that level
- ü Perfect in a market chugging along at historically low rates

ü Time-Critical—Prices at historical lows ('02)

- ü March 3rd, 2014: Price >\$7 per million BTU (EIA; Henry Hub)
- ü March 3rd, 2015: Price <\$2.80 per million BTU
- ü Risk: global event spurs price hikes

ü Municipalities Outside of Westchester

- ü Submit a proposal to the PSC
- ü Submit it intelligently so you are not waiting an extra four months due to an iterative process!
- ü An aggressive schedule would allow the municipality to fix rates advantageously

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PACE—Property Tax Payments; Senior Obligation Attached to Property

- Established history of property tax payments and low delinquencies
 - Delinquencies and defaults mitigated by the following:
 - General Fund obligation payments by municipality as per law in case of property owner payment delinquency or default
 - Strong finance underwriting guidelines and practices
 - Fully funded reserves
- Ability of towns, cities, counties to exercise lien authority (RPTL Sec. 1123, Article 11)
- Tax bill charge on property transfers with sale of property (NYS Article 5L)

.....result is long terms and low cost of Capital (and more buildings improved)

Rates

5 year = 4.03%

10 year = 4.92%

15 year = 5.60%

20 year = 6.00%

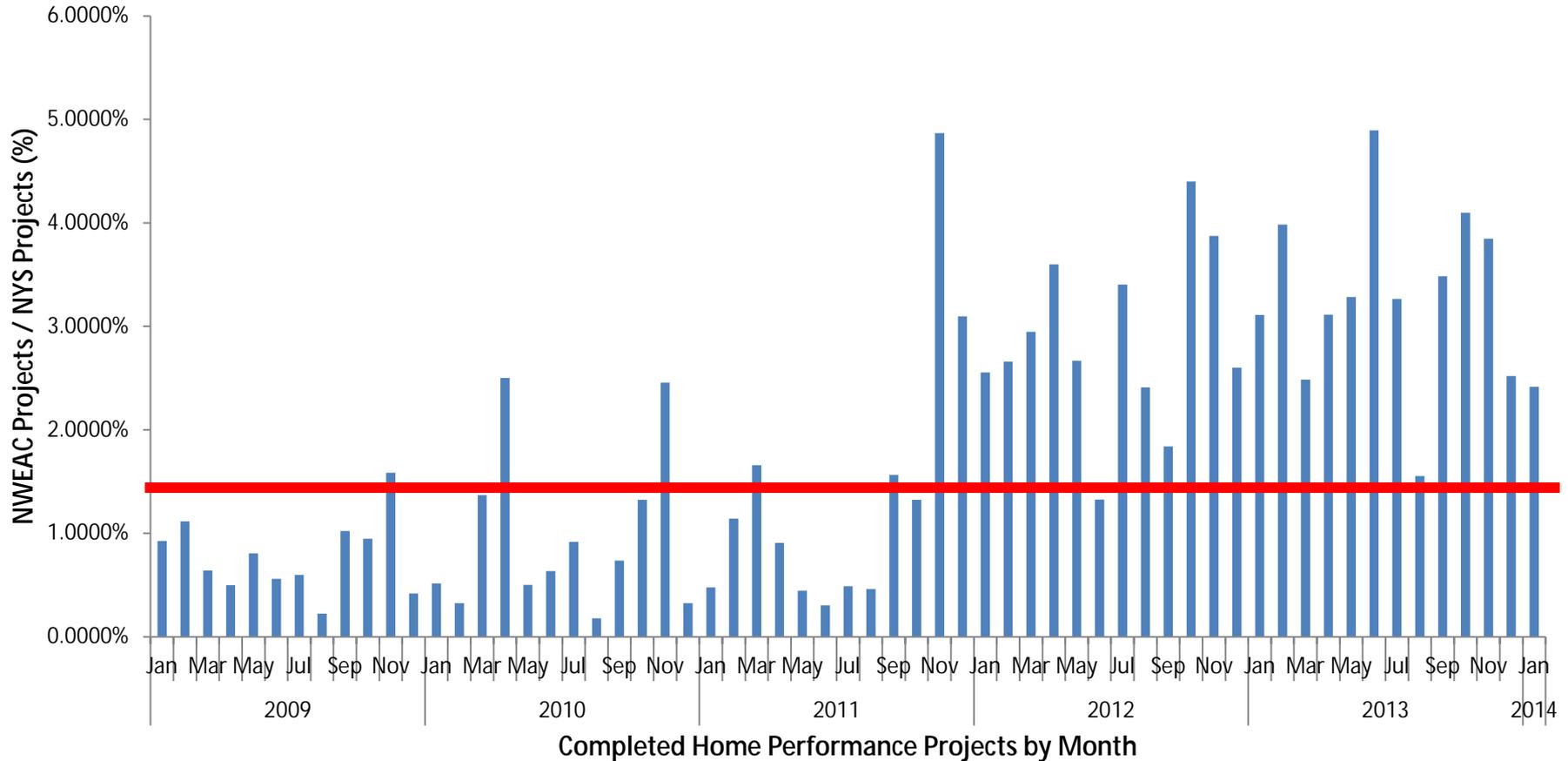
Notes

- Rates as of 3/2/2015 – subject to market conditions
- Rate locks out to 6 months add 4 to 13 basis points (.04 - 13%)
- Flexible Finance terms available from 5-20 years
- Financings incur a 4 point administration fee (may be capitalized)

Overview—Energy Improvement Corporation; formed to Access PACE; Any County or municipality can Join

- **Energy Improvement Corporation (EIC)** is a Local Development Corporation formed on July 7, 2011 to facilitate property improvements that reduce energy consumption
 - Purpose of the Corporation is to facilitate and finance qualified energy efficiency improvement projects and renewable energy system projects for residents, organizations, institutions and businesses in participating municipalities in New York
- **EIC manages Energize New York (ENY)** which is a community-based clean energy program funded through Department of Energy (DOE) and New York State Energy Research and Development Authority (NYSERDA) grants
 - Energize New York was developed by EIC and its partners to encourage property owners to undertake energy improvements for their buildings

NWEAC Percent of NYS Projects*



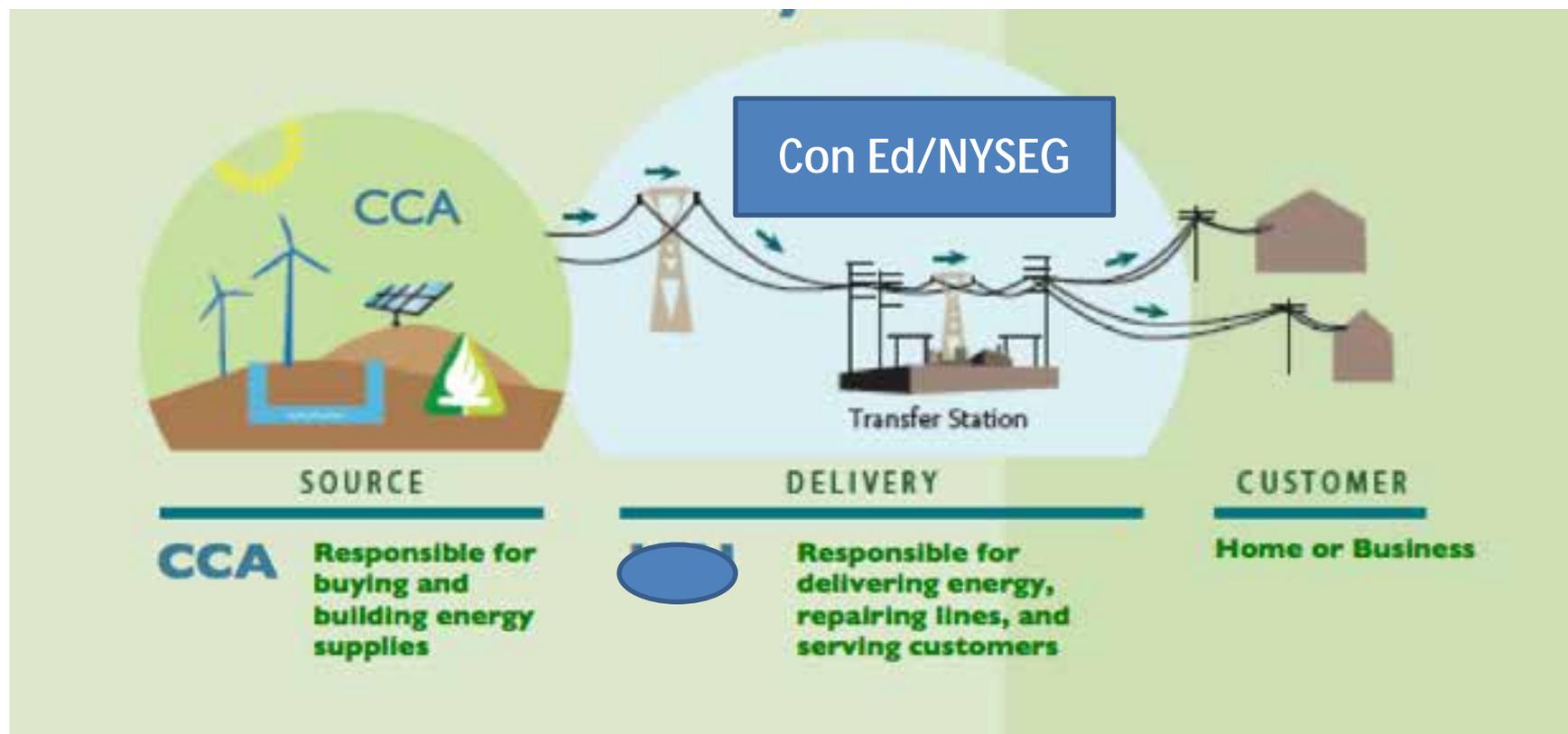
*Significant over performance for 27 of 29 months

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Investment in Microgrids—Example

A. Win-Win for Local Supply & Reliability



- The further a power plant is, from its customer, the greater is its “transmission loss” penalty
- Due to this “win-win” opportunity, CCAs should be uniquely eligible for NYS’ micro-grid support funds (\$40 million)

Investment in Microgrids & Efficiency—Example

B. ABILITY TO EARN REVENUE IN STATE POWER MARKETS

The power grid pays for services These services include:

1. Balancing intermittent renewable generation by adjusting generation or consumption (2 seconds notice)
 2. Providing relief when the grid is stressed by over-use by either generating more, or reducing consumption (2 hours notice) and
 3. Responding to local perturbations by either generating more or reducing consumption (10 minutes notice)
- The entire micro-grid can sell these services, together, allowing access to the more lucrative “grid support” programs



Investment in Renewables—Example: What’s Already Built

A. DIRECTED PURCHASE OF RENEWABLE SUPPLY REDUCES GHG EMISSIONS

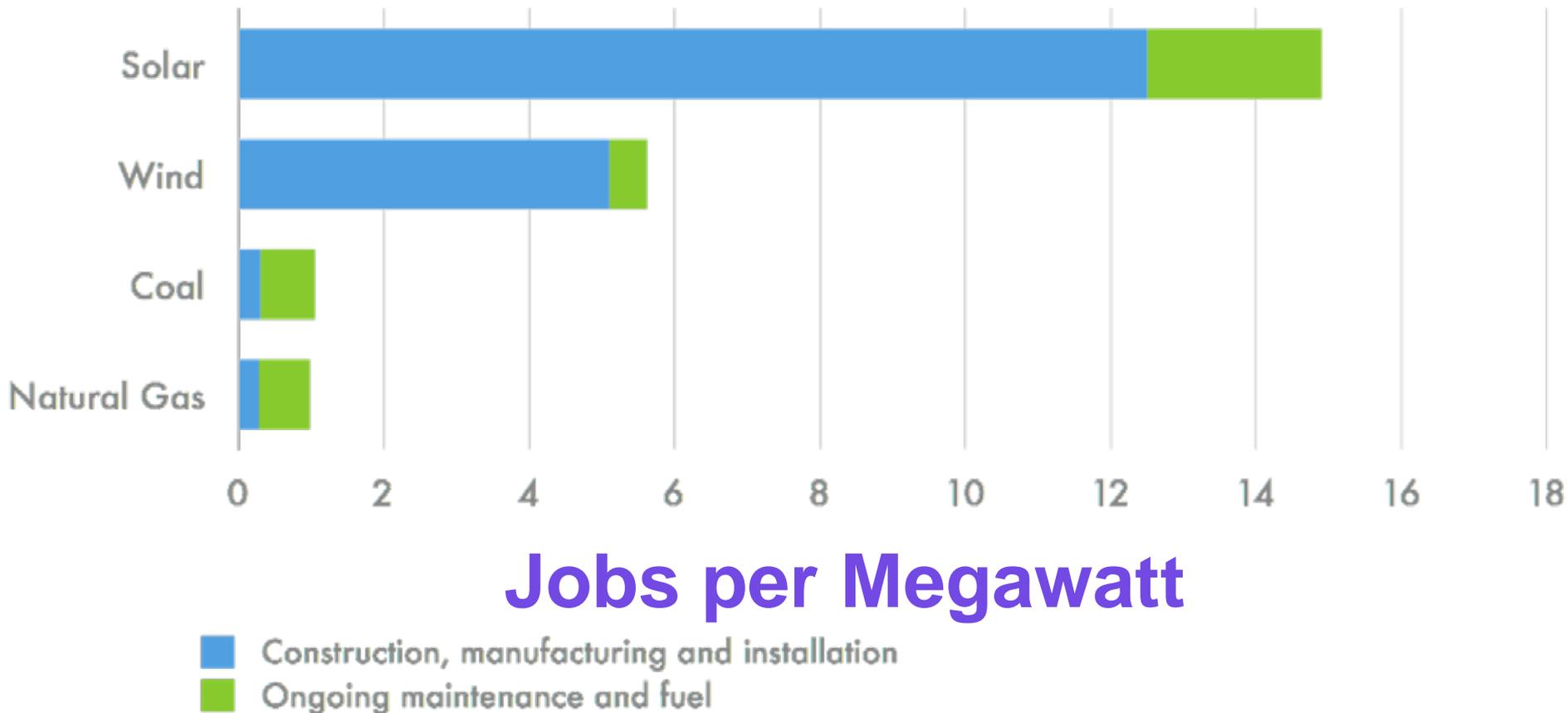


Excerpt from Town of San Anselmo , CA -- Climate Action Plan

Investment in Renewables—Example: What has yet to be Built

B. PPAS CAN DIRECTLY FINANCE LOCAL RENEWABLE SUPPLY

Local Ownership Boosts Jobs from Renewables



Investment in Renewable Generation—Community Solar

A. Retail Rates v. Wholesale Rates

- Retail Rate = T&D + Energy + Margins for IOU
- Wholesale Rate = Energy Only
- Net Metering = Retail Rate, whether it reduces your cost OR Feeds into the grid (up to 110% of your consumption)
 - You could become a 10% profitable utility
- Community Solar = an allowance for one site to WAY over-generate, and off-set others' bills
- This is a taking of the utility franchise—of course it's limited
- Helpful to engage and motivate utilities
- Independent proposals (or joint utility proposals) are due on July 15th
 - BIG opportunity!

Investment in Efficiency—Example

A. CAN CREATE EFFICIENCY INVESTMENT FUND, OVER AND ABOVE NYSERDA

- \$2 per MWH (2/5 of a penny per kWh) could create an annual \$8 million energy efficiency fund (100% of municipalities engaged; aggressive!), administered by Westchester municipalities
- Proposing such a fund + a floating adder (25% of savings)
 - If we get a fixed price, and the utility's price rises (IS invasion of Saudi Arabia?), it could add \$15 million - \$30 million to our fund
 - Administered by municipalities, dedicated exclusively to energy efficiency and energy management for residents and small businesses

Investment in Efficiency—Example

B. Intelligent Private Sector Investment Understands Market Nuance

- 15 different cash flows from smart energy management (some earn, some save)
 - Capacity Revenue
 - Spinning Reserves Revenue
 - Frequency Regulation Revenue
 - Hourly Market Revenue
 - Capacity Tag Savings
 - Dynamic Hourly Price Savings
 - Monthly Peak kW Savings
 - Peak kW Revenue
 - kWh Reduction Savings
 - Static kWh Price Reductions
 - Service/Maintenance Renewals
 - White Certificate Earnings.
 - Rebate Earnings
 - Power Quality Savings
 - Net Metering Savings/Earnings
- 200,000, privately financed smart thermostats, could access 100% of the above values

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Reforming the Energy Vision (“REV”)

ü Empowerment

- ü Utilities run a dynamic Distributed Energy Resources (“DER”) platform and are rewarded
- ü “Prosumers” should create a 100% competitive market in which utilities are NOT monopolies
- ü Invite innovative proposals to access 100% of the market value (read: all 15 cash flows so,
 - ü Subsidies akin to Community Solar will not be necessary BUT
 - ü Any program that bundles all the values will accomplish essentially the same thing
- ü Micro-grid policy an opportunity; market structure TBD
- ü Market-based energy efficiency pilots (July 15th)
- ü Will we get some portion of the SBC dollars, to distribute locally?
- ü Submit Solar Pilots by July 15th, 2015—Major Opportunity (Community Solar?)

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Action Items & Time-line?

ü Municipalities

- ü Sign comprehensive CCA contract with consultant—choose yes or no re referendum and schedule, if yes
- ü Settle on a Micro-grid company to lead your request for feasibility study
- ü Join Energy Improvement Corporation
- ü Prepare a submission for Community Solar
- ü Prepare for local crowd-funding (high ROI, local investment)?
- ü Invite someone to orient your Board—ASAP (CCA, Energize, Micro-grid)

OVERVIEW

I (and others) am (are) available to present at municipal governance meetings. Questions?

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