Maine Energy Storage Commission

Introductory Presentation by Two Lights Energy Advisors

Augusta, ME
November 19, 2019

Two Lights Energy Advisors / Thomas Murley

- 25+ Years experience in investing in renewable and conventional energy projects and energy storage projects +$3 billion in equity invested in over 107 billion of renewable projects
- Specialize in low-cost of capital from global institutional investors
- Started career in Maine in 1991 working for the Developer of the Chester, Houlton and Livermore Falls biomass projects
- Boards of Directors
    - Gore Street Energy Storage Fund – first battery storage fund listed on the London Stock Exchange
    - Ameresco – America's Largest independent Energy Service Provider, listed on the New York Stock Exchange
    - UK Green Investment Bank – the world's first and largest green bank

Gore Street Energy Storage Fund

http://www.gsenergystoragefund.com/index.aspx

New financing options have emerged

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Gore Street
Energy Storage Fund

- World's first stock exchange listed fund
  for battery storage projects
- 190 MW UK and Ireland Storage Projects
- Negotiating for Texas Storage Project
- Seeking further US opportunities
- Front-of-meter and behind-the-meter projects
- Multiple revenue sources – arbitrage, capacity, frequency response, demand management
- Funding investments on an all equity basis
- Cost of capital <10%
- Investing against 1-5 year revenue contracts

Sustainability and Impact is part of our DNA

Five factors affecting energy storage market / regulation

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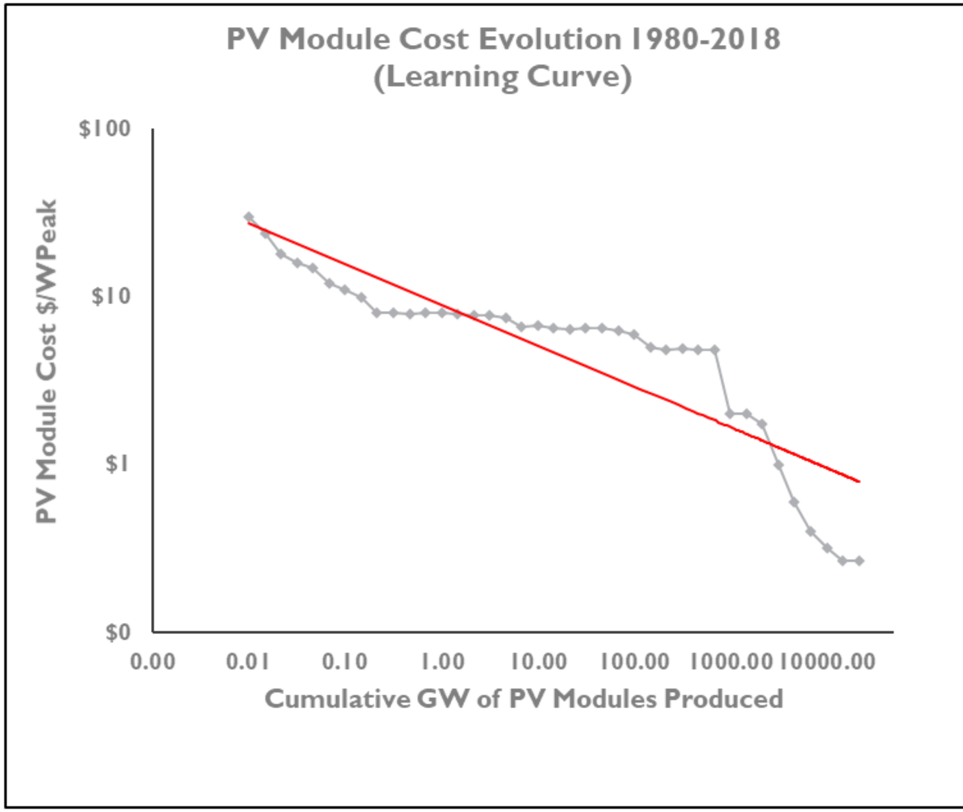
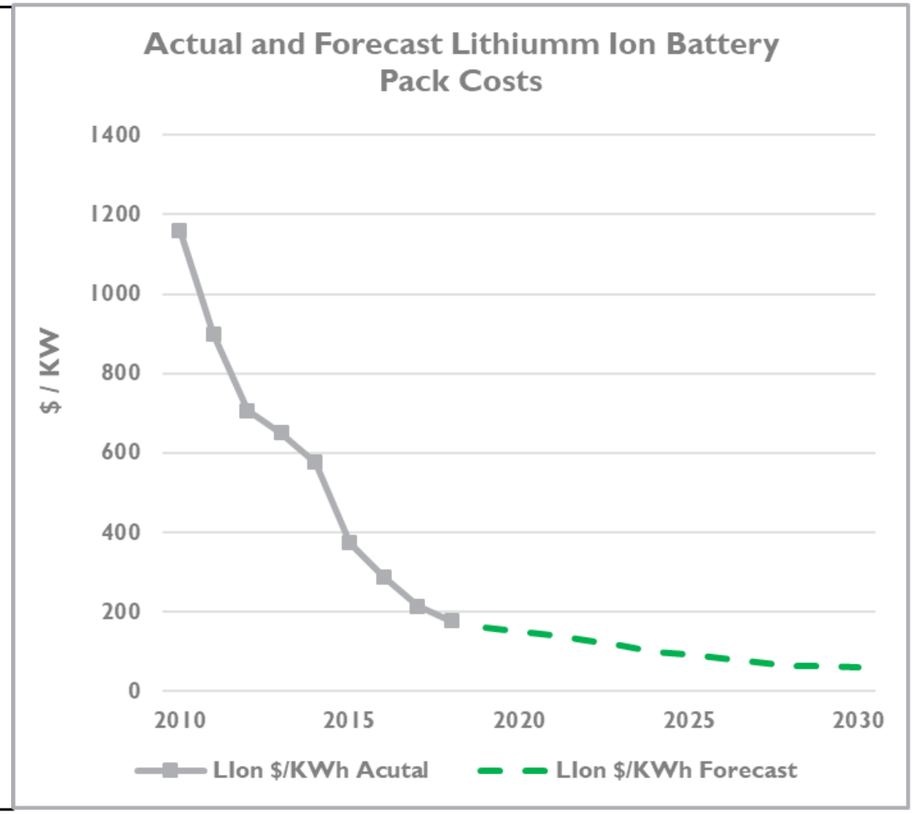
1. **Costs are falling and continuing to fall. Need to balance rush to new storage with the almost certainty that storage will cost less in 5 years, benefitting the consumer.**
2. **The traditional utility model is changing. Regulation needs to address these changes.**
3. **Storage cannot be addressed on a stand-alone basis. The amounts and types of storage needed depend on overall energy mix and grid flexibility and constraints. For New England a regional approach is needed**
4. **Customer relationships are changing. More corporate distributed generation and renewable energy purchases**
5. **Capital is plentiful and at the lowest cost in history. Gore Street shows that the cost of capital is falling and is willing to take some pricing risk. Infrastructure investment is the fastest growing investment asset class, and energy investment is the largest sub-class of infrastructure investment**

Storage costs are falling, following solar PV pattern





Source: Bloomberg, Two Lights Energy Advisors Research

The Utility Model is changing
Historic / Current Model

- Large, centrally located generation facilities
- Designed for one-way energy flow
- Utility controlled
- Technologically inflexible
- Simple market structures and transactions
- Highly regulated (rate base) and pass through

Source: Navigant Consulting

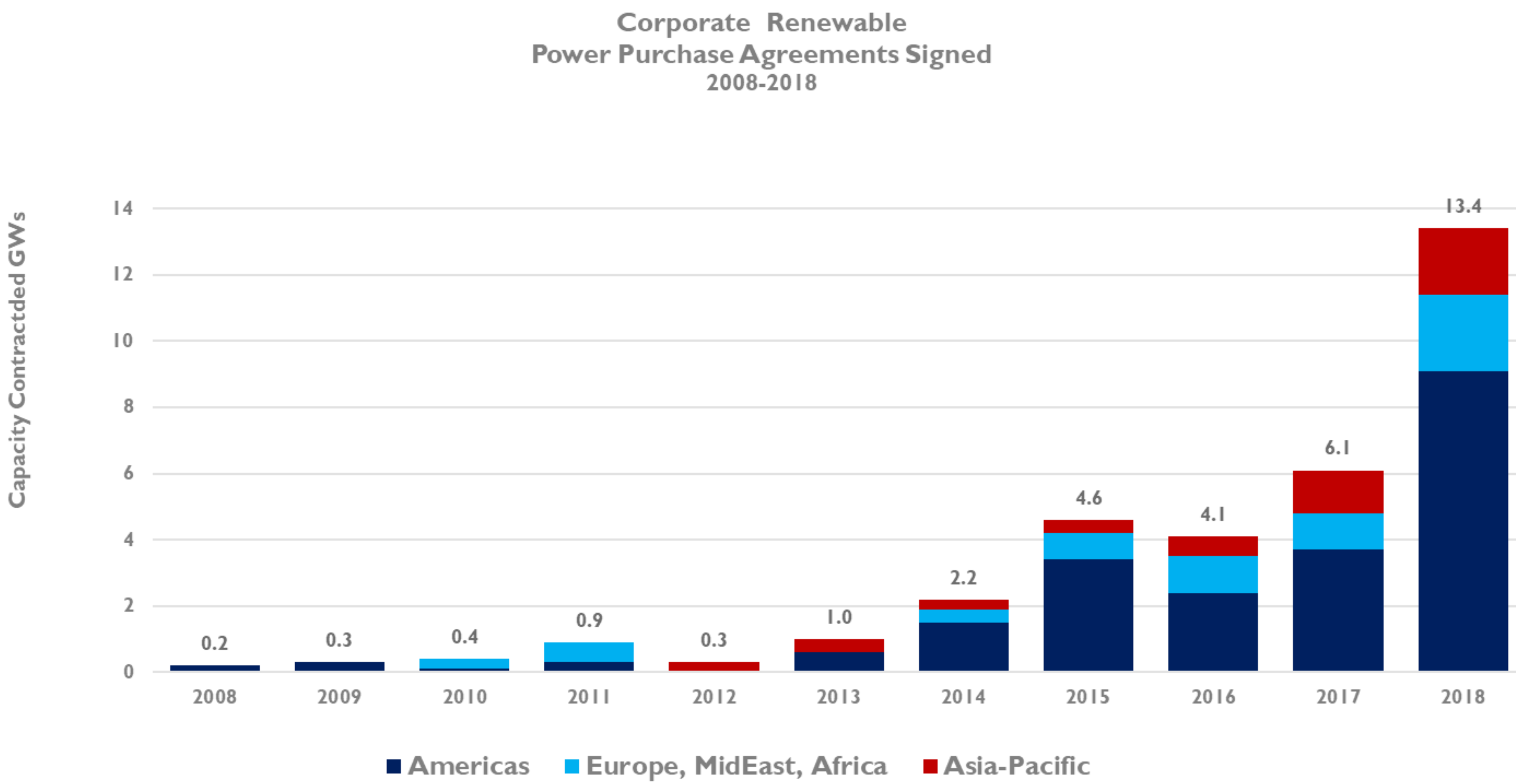
Storage cannot be addressed on a stand-alone basis
"From Grid to Cloud"

The Emerging Energy Cloud

- ➢ Distributed energy resources
- ➢ Multiple inputs and users, supporting two-way energy flows
- ➢ Digitalization of the electric-mechanical infrastructure: smart grid and behind-the-meter energy management systems
- ➢ Flexible, dynamic, and resilient
- ➢ Complex market structures and transactions
- ➢ Regulation changing rapidly around renewables, distributed generation (solar, microgrids, storage), net metering, etc.

Source: Navigant Consulting

Customer base is changing
Sustainability Growth in Corporate PPAs – 2008-2017



Source: Bloomberg

Unprecedented capital flows to infrastructure
Energy and power assets most attractive

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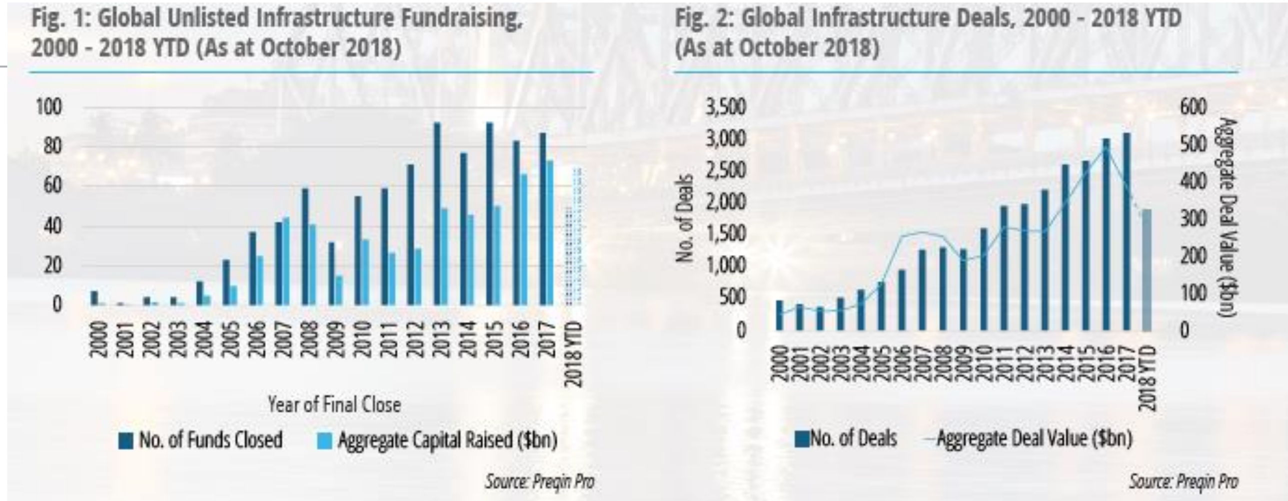

- Increasingly attractive investment class for pension funds and insurance companies:
  - Long dated assets / cash flows match long-dated life insurance and pension obligations
  - Replaces lost income from low interest rates
  - Income fully or partially inflation linked
  - "Essential services / real assets" offer downside protection
  - Low correlation to the economic cycle

- Result:
  - Infrastructure a recognized asset class like real estate or venture capital
  - ***300 Largest global pension fund have $15.7 trillion in capital, most now allocating 5% to infrastructure, or $785 billion***