Clean-Energy-Based Economic Development Strategies

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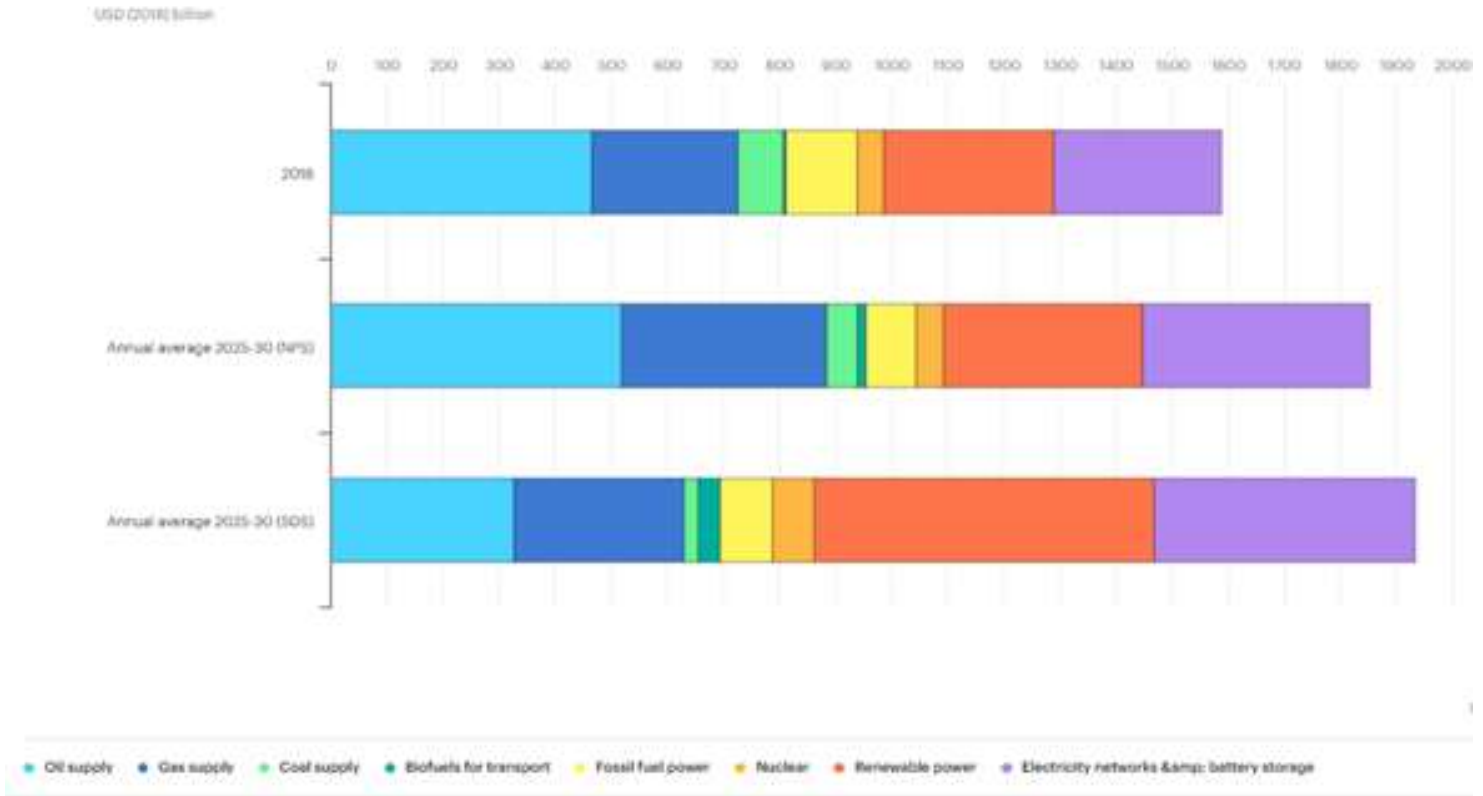
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About ITIF

- Independent, nonpartisan research and education institute focusing on intersection of technological innovation and public policy, including:

  - Innovation and competitiveness

  - IT and data

  - Telecommunications

  - Trade and globalization

  - Life sciences, agricultural biotech, and energy

- Formulates and promotes policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress

- World's top think tank for science and technology policy, according to the University of Pennsylvania's authoritative *Global Go To Think Tank* Index

Clean Energy: The Market Opportunity

- Global energy investment in 2018 =~ $1.6 trillion

- IEA "New Policies Scenario," 2025-2030 =~$1.8 trillion/yr

- IEA "Sustainable Development Scenario," 2025-2030 =~$2 trillion/yr

- Shifting toward:

  – Renewables (red)

  – Electricity networks (purple)

Source: IEA, World Energy Investment, 2019

5 "Parallel Tracks" for State and Regional Strategies

- Incentives

- Start-ups

- Clusters

- Resource substitution

- Market demand

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Clean-Energy-Based Economic Development: Parallel Tracks for State and Local Policy

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CSIS | CENTER FOR STRATEGIC & INTERNATIONAL STUDIES

Energy in America

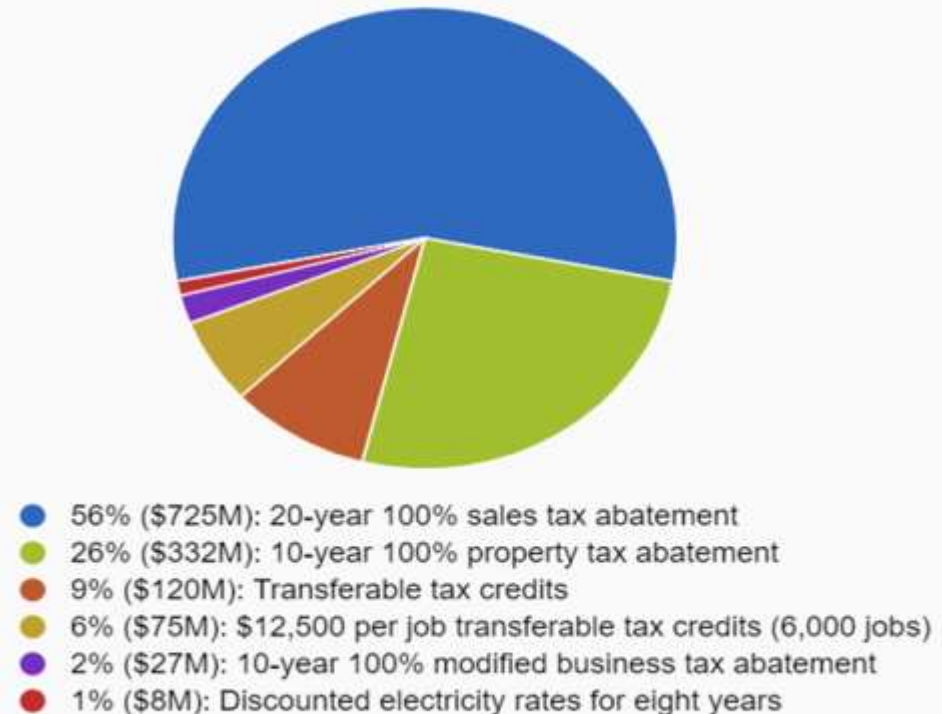Energy as a Source of Economic Growth and Social Mobility

Track 1: Incentives

- Goal: Induce investment

- Question: "Race to the bottom"?

- Examples:
  - Electric vehicle assembly
  - Electric vehicle batteries
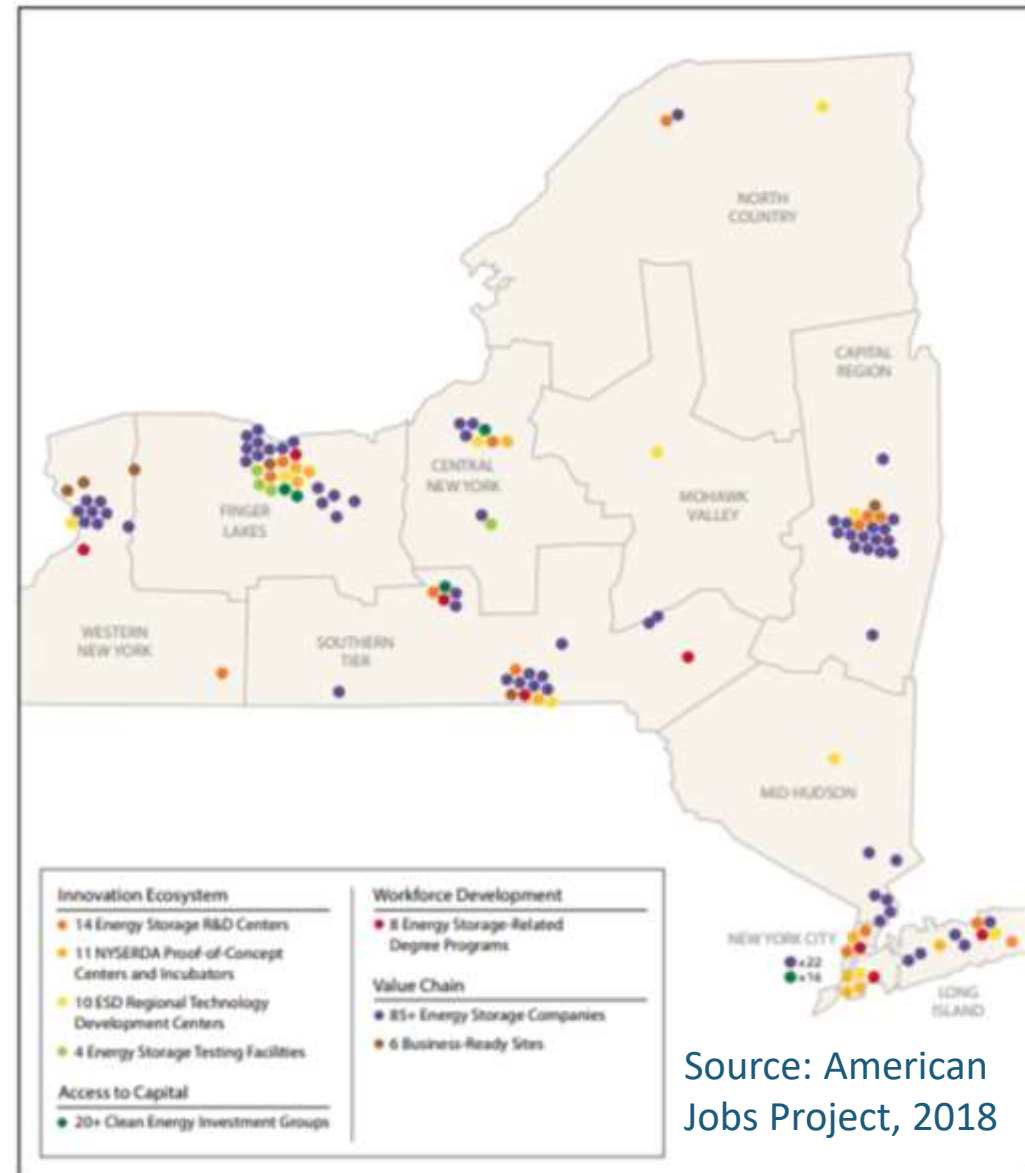
Tesla's Reported Incentive Package from Nevada

Source: Reno Gazette-Journal, September 4, 2014

Track 2: Start-Ups

- Goal: "Bottom-up" growth

- Question: How to cross "valleys of death"?

- Examples:

  – New York

  – Colorado

New York State's Energy Storage Industry Assets

Innovation Ecosystem
- 14 Energy Storage R&D Centers
- 11 NYSERDA Proof-of-Concept Centers and Incubators
- 10 ESD Regional Technology Development Centers
- 4 Energy Storage Testing Facilities

Access to Capital
- 20+ Clean Energy Investment Groups

Workforce Development
- 8 Energy Storage-Related Degree Programs

Value Chain
- 85+ Energy Storage Companies
- 6 Business-Ready Sites

Source: American Jobs Project, 2018

Track 3: Clusters

- Goal: Cluster "deepening"

- Question: Do capabilities transfer across sectors?

- Examples:

  – Smart grid (North Carolina)

  – Carbon capture (Wyoming)
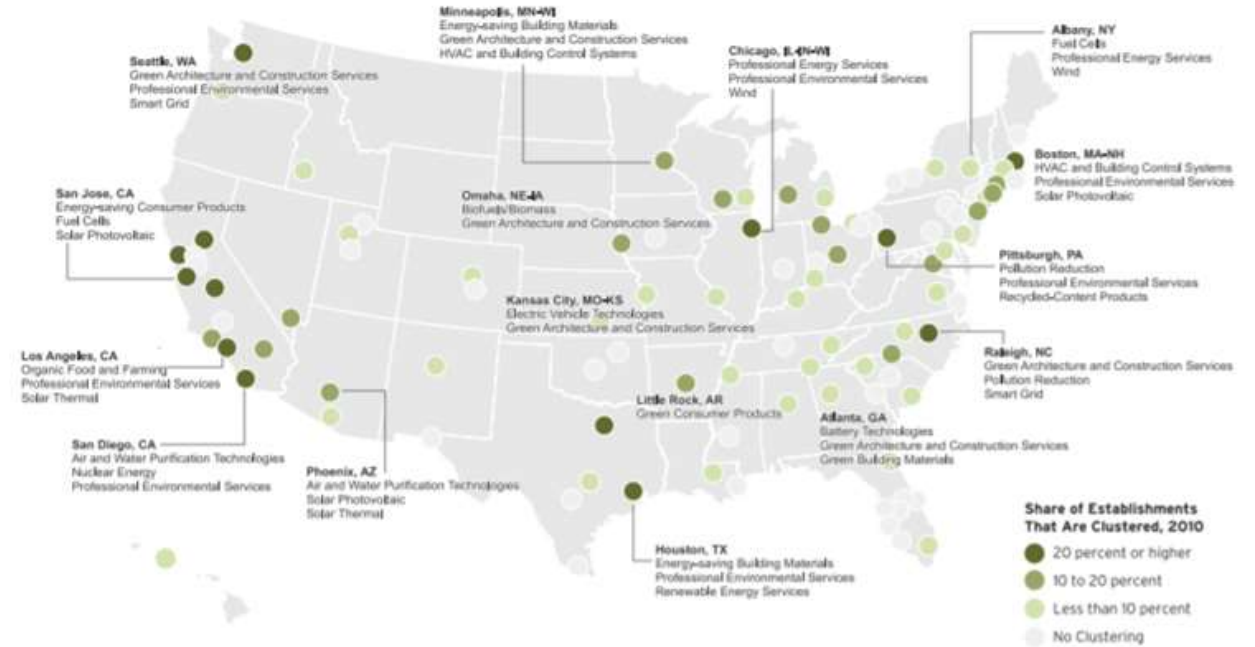
Source: Brookings-Battelle Clean Economy Database
An establishment in a given segment is defined to be in a cluster if other establishments in the same county comprised at least one percent of all U.S. employment for the given segment.

Track 4: Resource Substitution

- Goal: Substitute indigenous for imported resources

- Question: Substituting one dependence for another?

- Example:

  − Hawaii

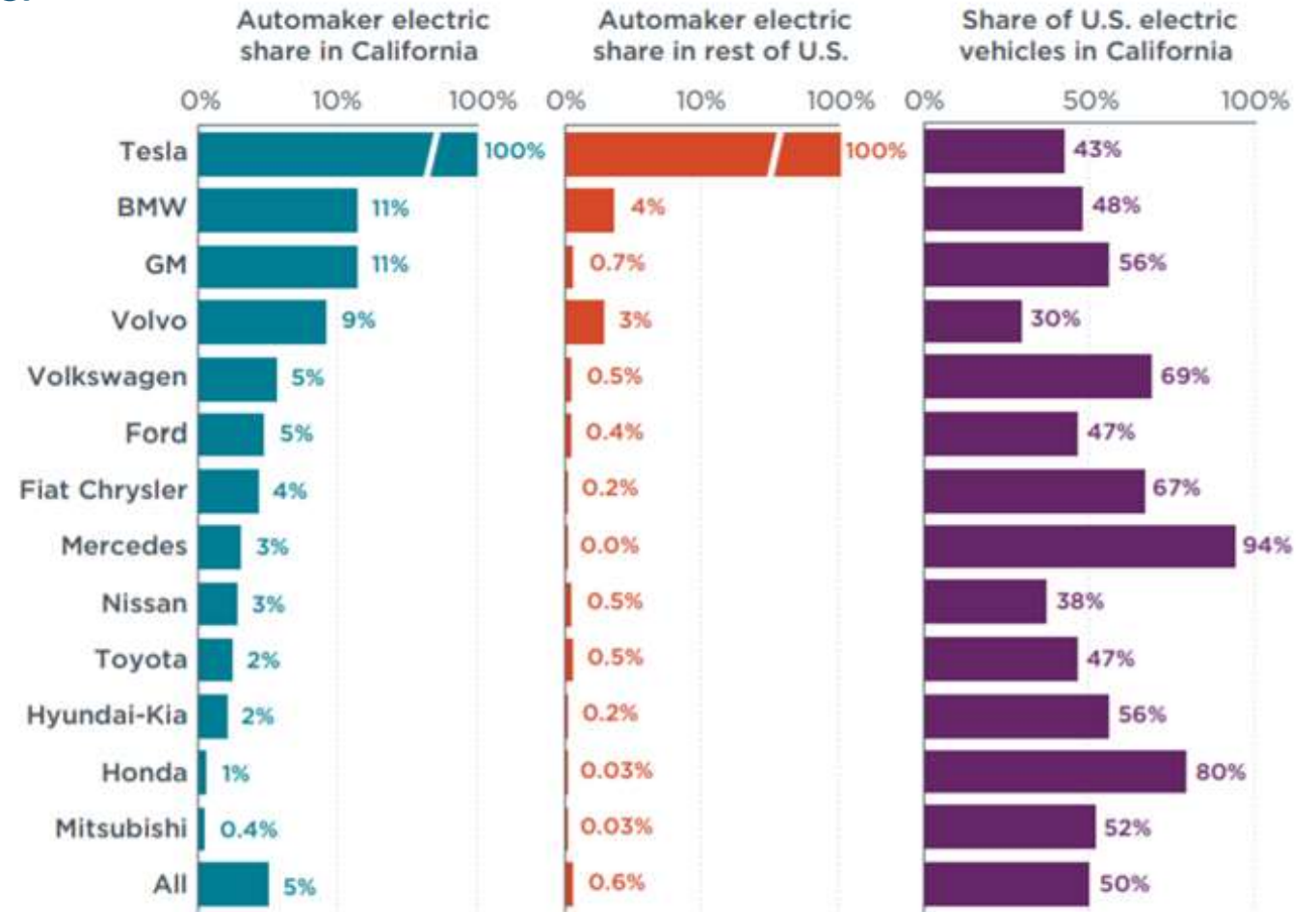How Hawaii Generated Electricity, 2001-2017
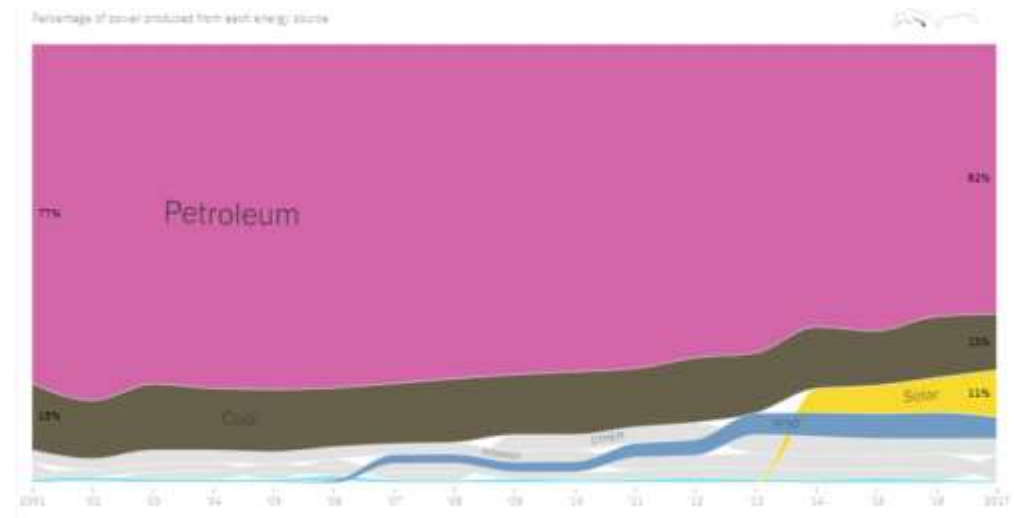
Source: *New York Times*

Track 5: Market Demand

- Goal: Create export base by driving local demand

- Question: Is the local market big or sophisticated enough?

- Examples:
  - Solar panel manufacturing
  - Electric vehicle manufacturing

California and U.S. Electric Vehicle Sales

	Automaker electric share in California	Automaker electric share in rest of U.S.	Share of U.S. electric vehicles in California
Tesla	100%	100%	43%
BMW	11%	4%	48%
GM	11%	0.7%	56%
Volvo	9%	3%	30%
Volkswagen	5%	0.5%	69%
Ford	5%	0.4%	47%
Fiat Chrysler	4%	0.2%	67%
Mercedes	3%	0.0%	94%
Nissan	3%	0.5%	38%
Toyota	2%	0.5%	47%
Hyundai-Kia	2%	0.2%	56%
Honda	1%	0.03%	80%
Mitsubishi	0.4%	0.03%	52%
All	5%	0.6%	50%

Source: Intl. Council for Clean Transportation (2018)

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What the Federal Government Should Do

- Support the transition

- Provide timely information

- Assist with state and regional strategic planning

- Encourage federal laboratories and offices to partner with regions

- Improve tech transfer mechanisms

- Expand investment in use-inspired R&D and cluster programs

Thank You!

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