

PRESENTATION

# Hawaii-DOE Clean Energy Initiative

## Strategic Vision and Implementation

March, 2008



# Hawaii presents unique opportunities, both immediate and long-term, for energy sector transformation

- ▶ The state has abundant **local renewable resources**, including sun, wind, geothermal, etc.
- ▶ Hawaii pays the **highest electricity costs** in the nation and among the highest transportation fuel costs
- ▶ Hawaii has large, relatively **unexploited opportunities for efficiency**
- ▶ Oil provides approximately 85% of the state's energy, leaving Hawaii vulnerable to supply disruptions and **energy insecurity**
- ▶ Each island is an **isolated micro-grid** providing an opportunity to focus on whole system

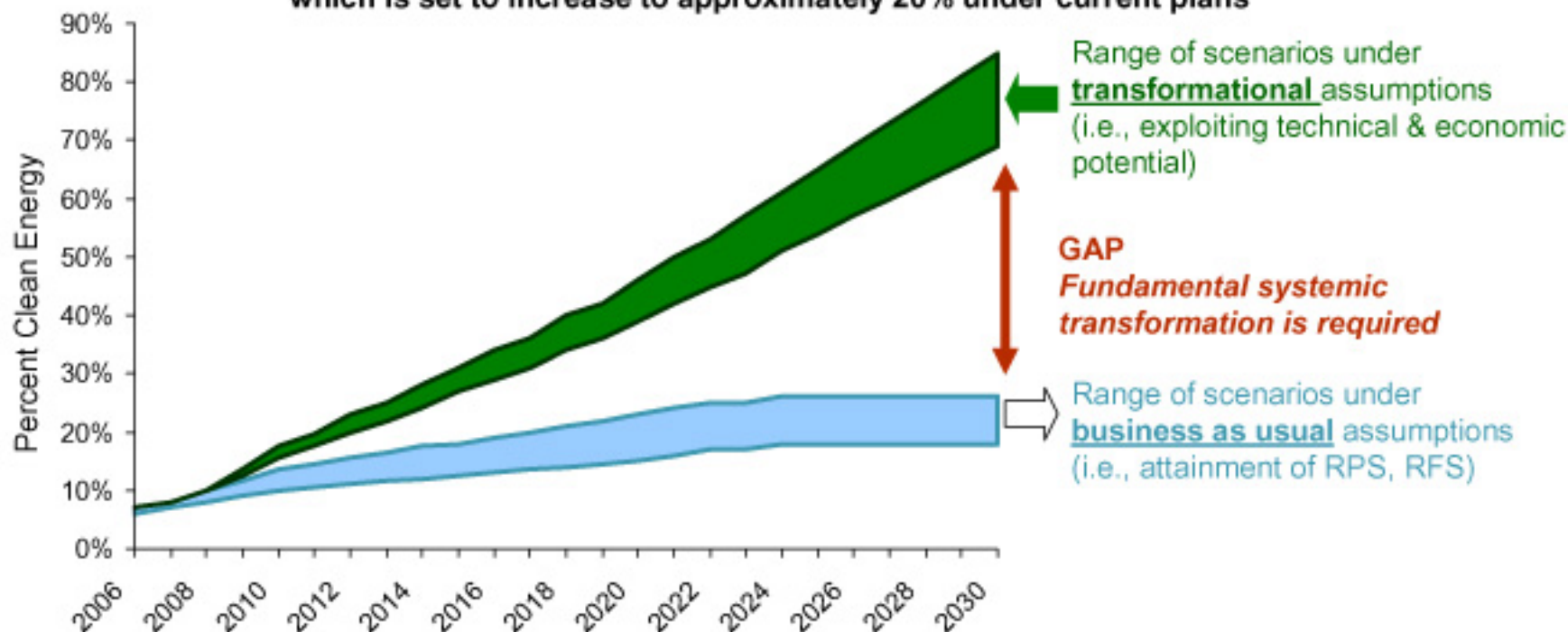
## Vision for Hawaii Clean Energy Initiative

*To partner with Hawaii and serve as a global model for creating a sustainable, flexible, and economically vibrant path to a carbon-free energy future*



# Hawaii needs to transition to an economy powered by clean energy, instead of imported oil...

In 2007 Hawaii's energy portfolio included 8% renewable energy, a proportion which is set to increase to approximately 20% under current plans



...but doing so will require a substantive transformation of regulatory, financial, and institutional systems



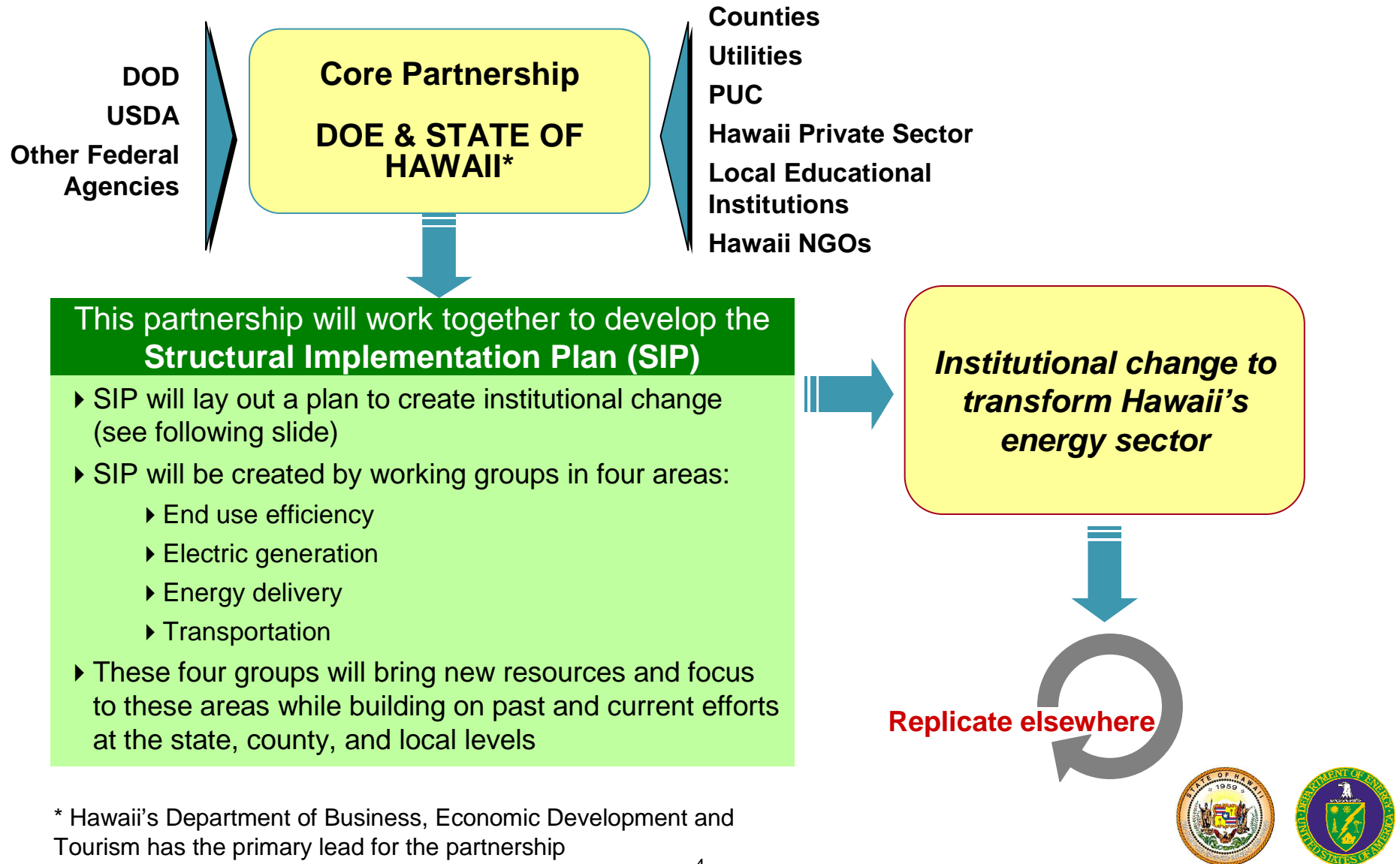
# To accelerate this transformative process, Hawaii and U.S. DOE have joined forces to form the Hawaii Clean Energy Initiative

The goals of the initiative are as follows:

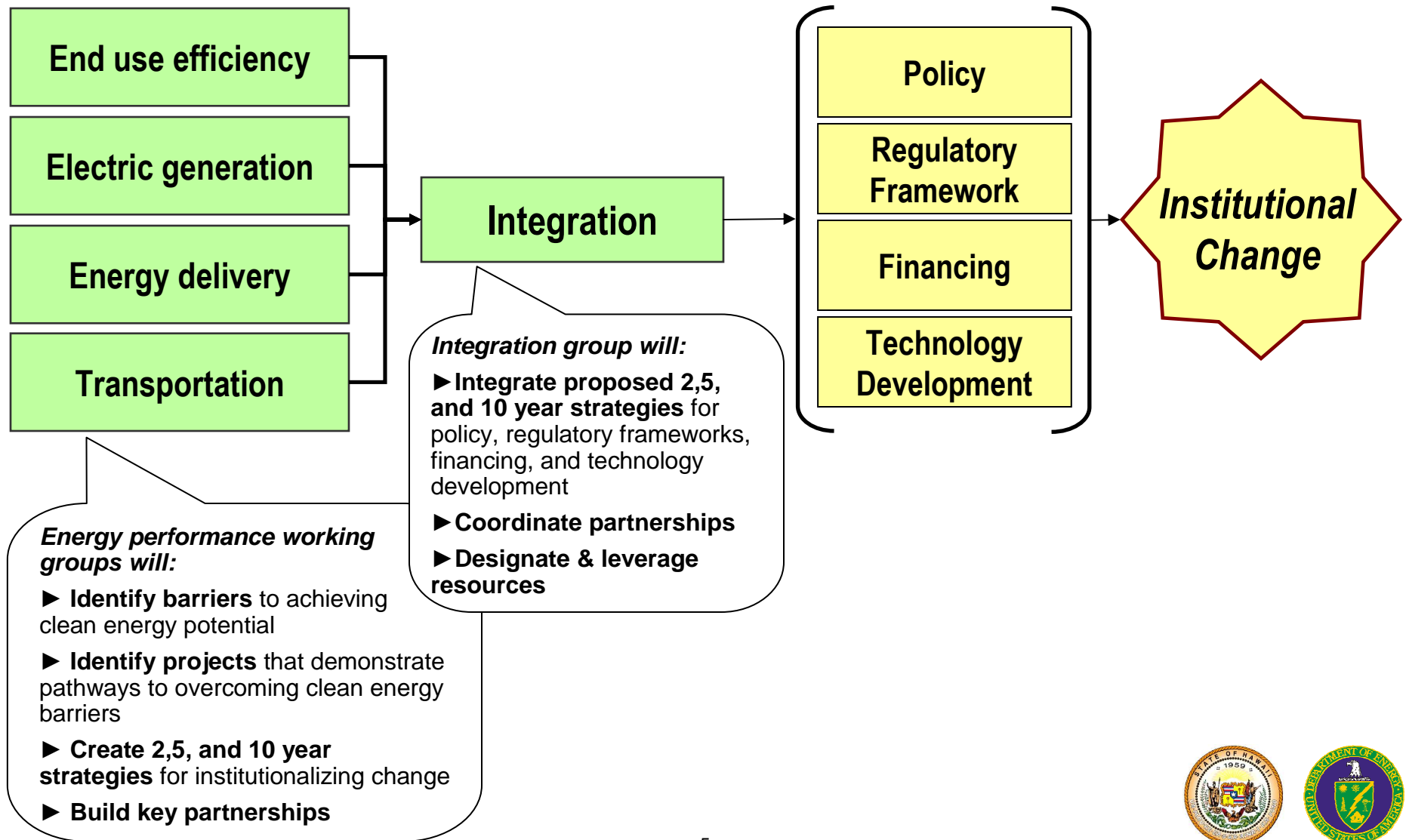
- ▶ *Achieve a 60-70% or greater clean energy basis for Hawaii within a generation*
- ▶ *Serve as a “open source” learning opportunity:* Make Hawaii a replicable model for achievement of a clean energy-based economy for the world
- ▶ *Increase the security of Hawaii:* Diversify Hawaii’s energy supply and increase the security of its energy delivery and defense capabilities
- ▶ *Create economic opportunity at all levels of society:* Develop and diversify Hawaii’s economy through innovative, market-based mechanisms that allow every sector to benefit from the transition to clean energy
- ▶ *Foster and demonstrate innovation:* in the technology, financial, organizational and policy models used to achieve a clean energy future
- ▶ *Build the workforce of the future:* help Hawaii create educational and employment opportunities necessary to sustain a clean energy economy



# DOE and Hawaii will coordinate the Initiative, drawing on the critical input and expertise of local stakeholders and other Federal agencies



# The structural implementation plan will outline strategic changes needed in Hawaii's policy, regulatory, financial, & technology structures



# The DOE-Hawaii Memorandum of Understanding

## DOE commitment

- ▶ Establish a DOE presence in Hawaii providing access to state-of-the-art technical advancements
- ▶ Serve as a conduit between Hawaii and Federal agencies that contribute to the core activities

## State of Hawaii commitment

- ▶ Explore legislative and other policy options to support transformation
- ▶ Explore regulatory changes to provide a platform for transformational change
- ▶ Work with Hawaii educational institutions
- ▶ Coordinate with native Hawaiians and others to ensure consideration of local cultural needs

## Joint commitment

- ▶ Investment and execution of projects that demonstrate the transformation of the state's energy infrastructure
- ▶ Joint chairing of federal-state working groups that will define the transformational actions needed
- ▶ Execution of long-term, multi-sector education and outreach campaign to communicate the opportunities and benefits of a clean energy economy to businesses, policymakers, and consumers



# Anticipated partners and participants

## Public Sector Representatives

- ▶ Governor Lingle
- ▶ Partial US Congressional Delegation and staff
- ▶ Partial Hawaii Legislature and staff
- ▶ County Mayors
- ▶ Selected County Council members
- ▶ Department of Business, Economic Development and Tourism and Hawaii energy leadership
- ▶ DOE EERE and OE representatives
- ▶ Hawaii DOD Commanders
- ▶ USDA Hawaii State Director
- ▶ Public Utilities Commission representatives
- ▶ Consumer Advocate

## Industry, NGO, and Other Representatives

- ▶ Hawaiian Electric Industries, HECO, MECO, HELCO
- ▶ Kauai Island Utility Cooperative
- ▶ Hawaii Energy Policy Forum representatives
- ▶ County Economic Development Boards
- ▶ Environmental organizations
- ▶ Native Hawaiian community members
- ▶ Kohala Center
- ▶ Hawaii Natural Energy Institute representatives
- ▶ University and community college representatives
- ▶ Private industry, e.g. General Electric, UPC Wind, Castle and Cooke, Hawaiian Commercial & Sugar, Gay & Robinson, Pacific Biodiesel
- ▶ Others



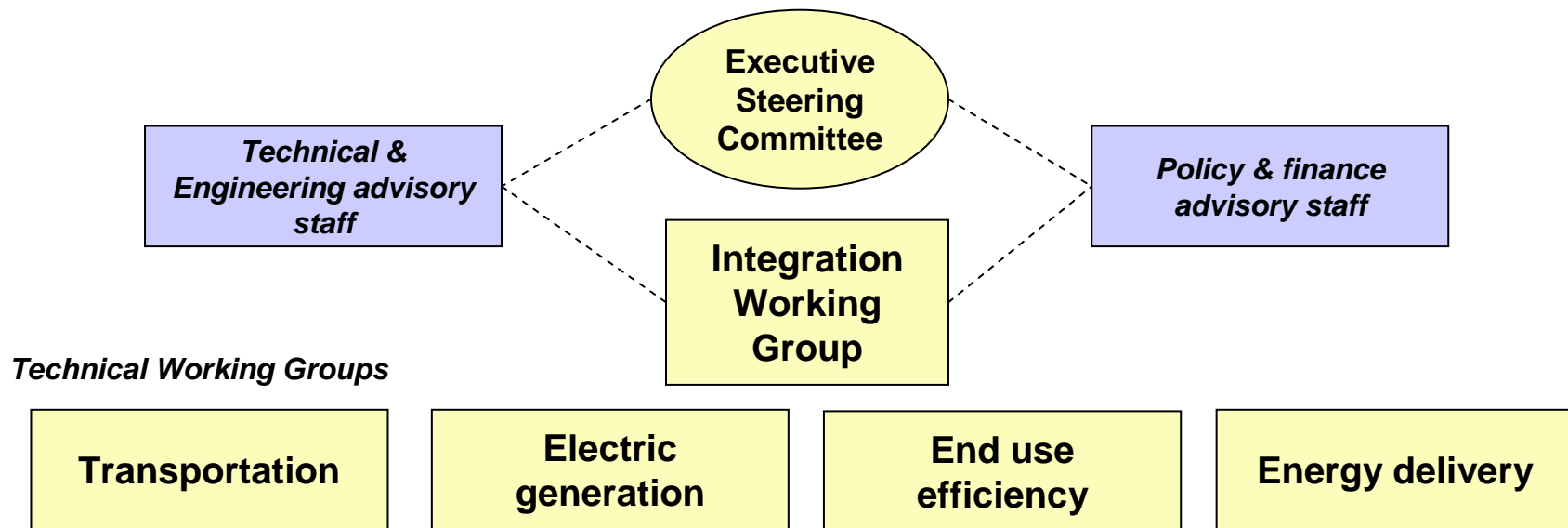


# Working groups, projects, and transformational activities

Activity	Calendar Year		
	2008	2009	2010
Hawaii Clean Energy Initiative Launch	▲ MOU		
<b>Strategic Implementation Plans (SIPs) for 4 Working Groups</b>			
End use efficiency		} Final SIPs	
Electric generation			
Energy delivery			
Transportation			
<b>Master Integrated Plan</b>			
<b>Near-term Projects</b>			
Grid integration for high penetration renewables	<div style="border: 1px solid black; padding: 5px;"> <p><b>To be determined</b> Project solicitations and rollouts will be an outcome of the final SIPs</p> </div>		
Energy storage solutions for renewables			
Net zero energy homes & communities			
Tropical bioenergy feedstock & biorefinery development			
Distributed generation			
Advanced transportation technology demonstrations			
<b>Transformational Actions</b>			
Regulatory frameworks	<div style="border: 1px solid black; padding: 5px;"> <p><b>To be determined</b> Transformational actions will be determined by the final SIPs</p> </div>		
Policy engagement with Governor, Legislature, others			
Financial mechanisms at State, County, Federal levels			
Cultural and educational engagement at State, County levels			



# Working Groups will be small collaborative teams focused on long-term, intelligent solutions



- ▶ **Executive Steering Committee**, comprised of State government and DOE reps, will oversee the Working Groups to ensure alignment between actions (both policy and project) and the overall goal of the partnership.
- ▶ **Integration Working Group**, comprised of DOE and Hawaii representatives, will review the recommendations of the Technical Working Groups to ensure that a systematic approach is developed without “crossed wires” regarding incentives and resources.
- ▶ **Technical Working Groups**, comprised of Hawaii stakeholders (e.g., Hawaii DBEDT, HECO) as well as DOE and DOE National Laboratories, will provide technical advice.



# The approach to HCEI is based on three areas of effort: Working Groups, Partnership Projects, and Transformation Economics

