



# Investing in human capacity – from policy makers to technicians

**Session 2.2: Innovative uses of renewable energy**

EU-Caribbean Sustainable Energy Conference

Barbados, 10-11 October 2016



## Some indicators...

- **Energy Efficiency**

In a 2013 report, SustainLabour (<http://www.sustainlabour.org>) estimated 25,900 jobs are created for every one billion euros (\$1,135 billion) invested in energy efficient buildings, and that there were 232,050 jobs currently in the European Union insulation industry.

- **Renewable Energy**

8.1 million direct and indirect jobs in the renewable energy sector in 2015 (excl. hydropower)

Across the globe, solar PV has the highest employment in the renewable energy sector, with roughly 2.8 million jobs. Liquid biofuels trails closely behind with 1.7 million jobs, followed by wind power at approximately 1.1 million jobs.

Renewable Energy and Jobs Annual Report 2016, IRENA  
(<http://www.irena.org>)



## Key findings from the recent CAP4INNO and BRIDGE/REETA studies include that:

- there is a **severe lack of locally available human resource to offer programs related to energy access and efficiency**. Existing courses are usually taught by visiting academics. This creates dependence and vulnerability for the programs and the curriculum may not be adequately contextualized to the local circumstances.
- Industry identified a lack of practical hands-on experience as a major concern. Companies would like to see more collaboration with Tertiary Education Institutions, in particular **targeted training programs to suit the needs of growing industries, especially in developing technical capacity**, as well as conducting feasibility studies or analyses through student placements/internships.
- Educational institutions need more investment/resources to develop training labs. This is also in line with the industry's desire to have students with more hands-on practical experience.



## Demand for Capacity Building

### There are already graduate programs in the Caribbean Region in Renewable Energy

- Strong bias on engineering and technology management.
- Not interdisciplinary or including climate issues, policy and innovation
- Qualified students go abroad
- Industry claims lack of qualified people
- Difficulties to get loans or financial support



### Master Programme in Sustainable Energy & Climate Change - Innovation and Entrepreneurship

- Focus on entrepreneurship and innovation to create local jobs
- Encouraging new green business initiatives by its graduates
- Multi-disciplinary approach as well as cross-sectorial approach drawing on the expertise of many faculties within the University
- Thesis will be a business plan to apply for financial support





**ENERGY STORAGE, SMART GRID**

Vocational School Notre Dame de Guadalupe

**POWERING AGRICULTURE**  
ISA University

**Financial Analysis Training**

**ProNet training (EPA)**  
**ISO 50001 Energy Management**  
**Financial Analysis Training**

Community of Practice, Virtual Learning Environment

**Solar Energy, Energy Auditing and Lighting Technologies/MTTs**  
M.Sc UWI Cave Hill

**EV maintenance training**

**BIO ENERGY**

University of Belize, Belmopan Comprehensive, ITVET

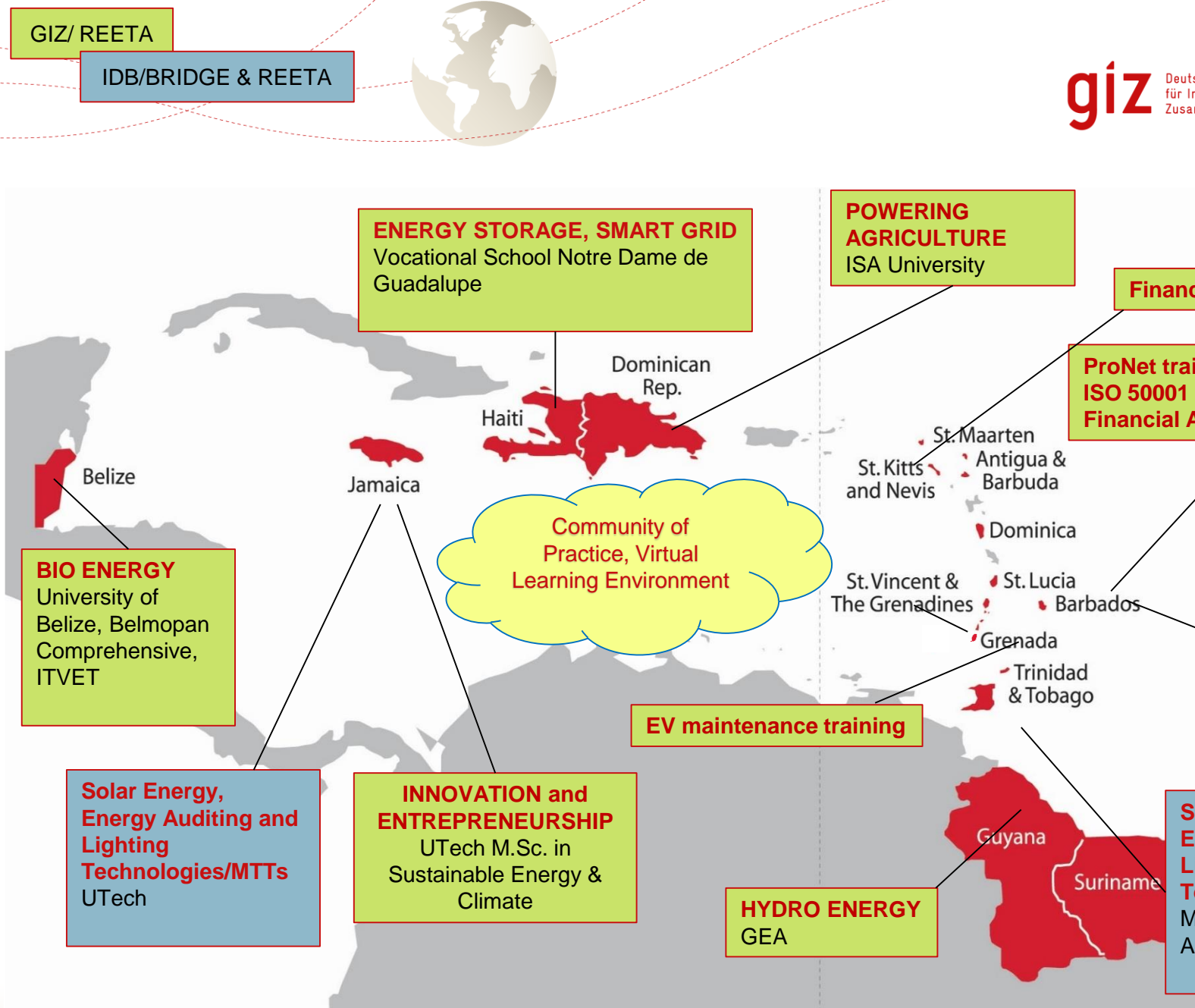
**Solar Energy, Energy Auditing and Lighting Technologies/MTTs**  
UTech

**INNOVATION and ENTREPRENEURSHIP**

UTech M.Sc. in Sustainable Energy & Climate

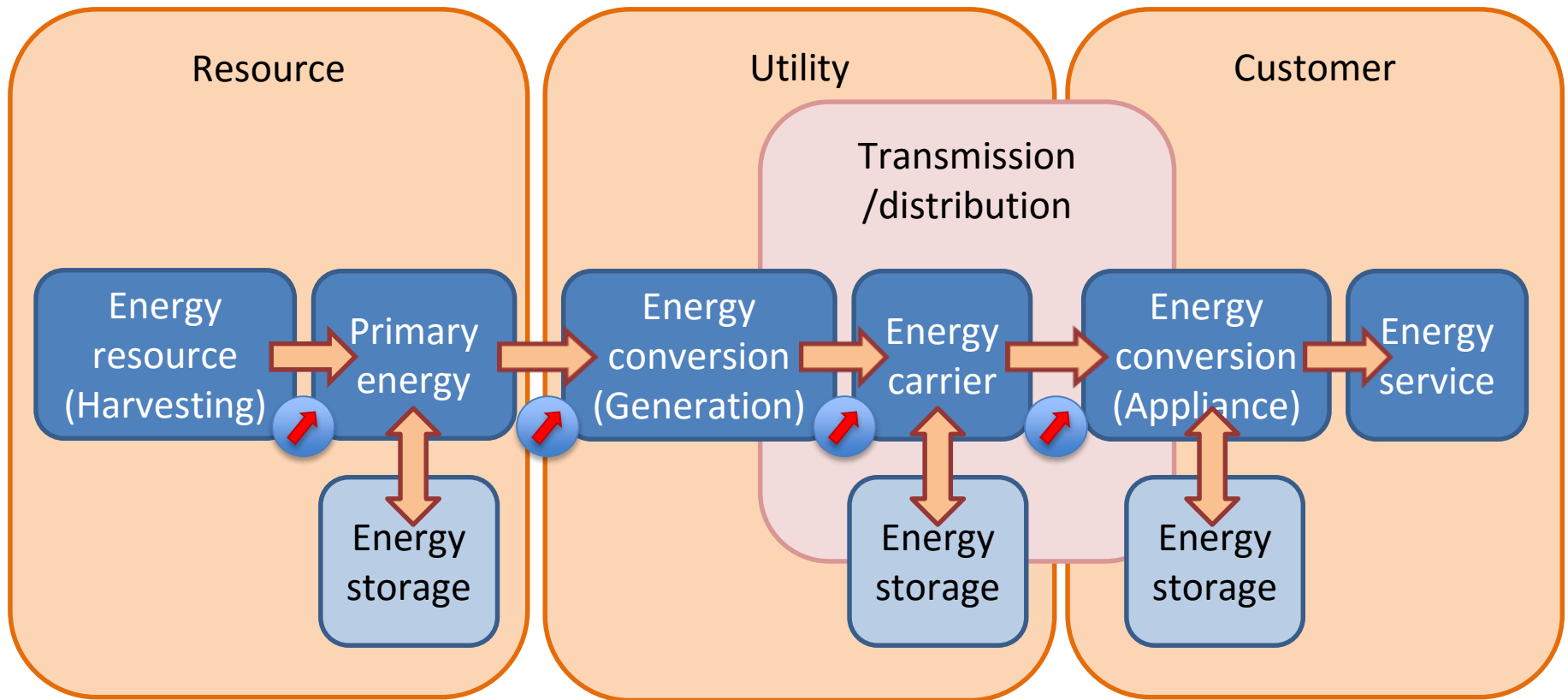
**HYDRO ENERGY**  
GEA

**Solar Energy, Energy Auditing and Lighting Technologies/MTTs**  
M.Sc. UWI St. Augustine



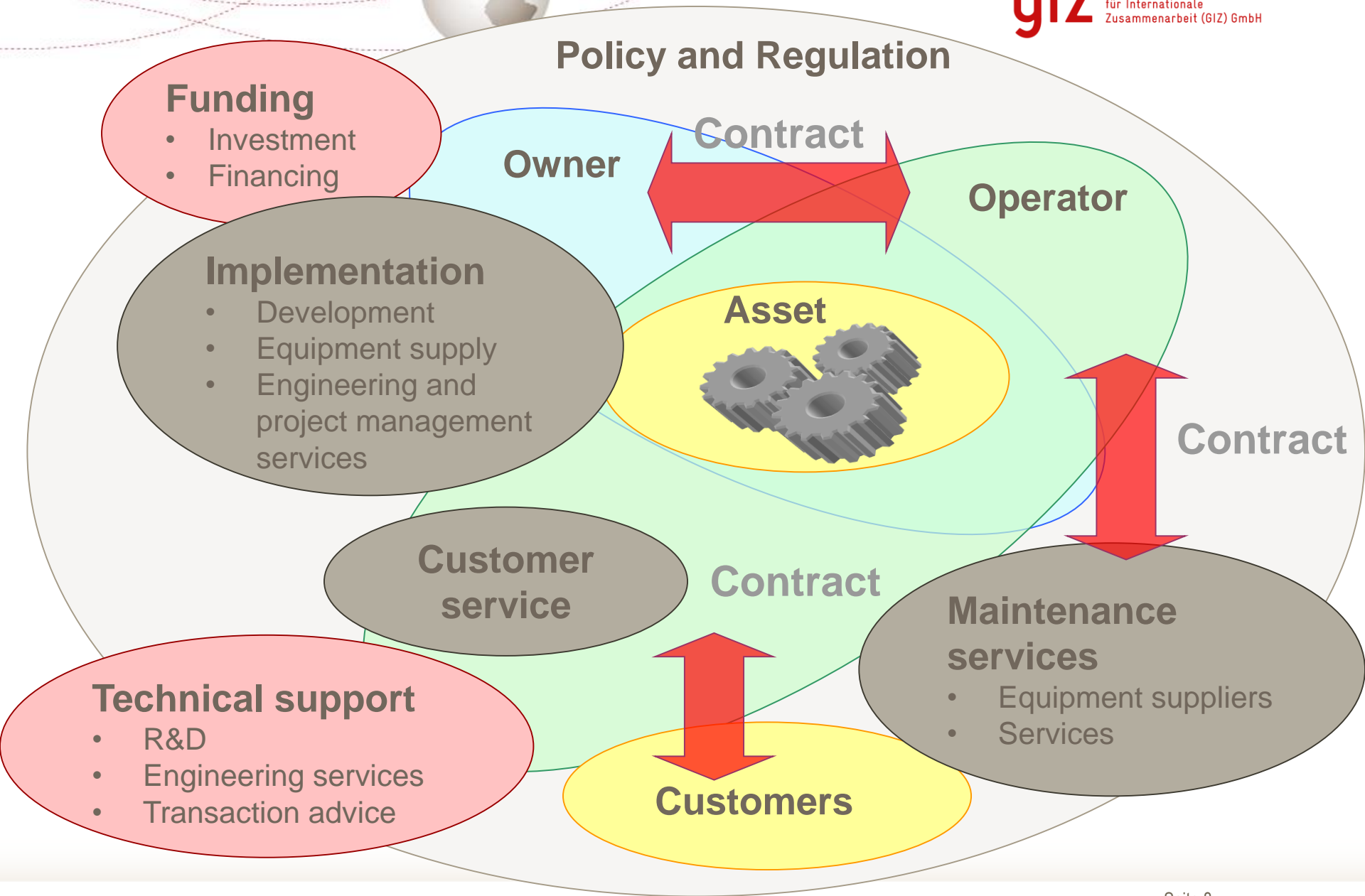


## The energy services supply chain



Metering points

# Roles and responsibilities





## Employment opportunity sub-sectors

### Energy efficiency

- Appliances
- Buildings
- Public Transportation
- Smart Grid and Demand Management
- Vehicles

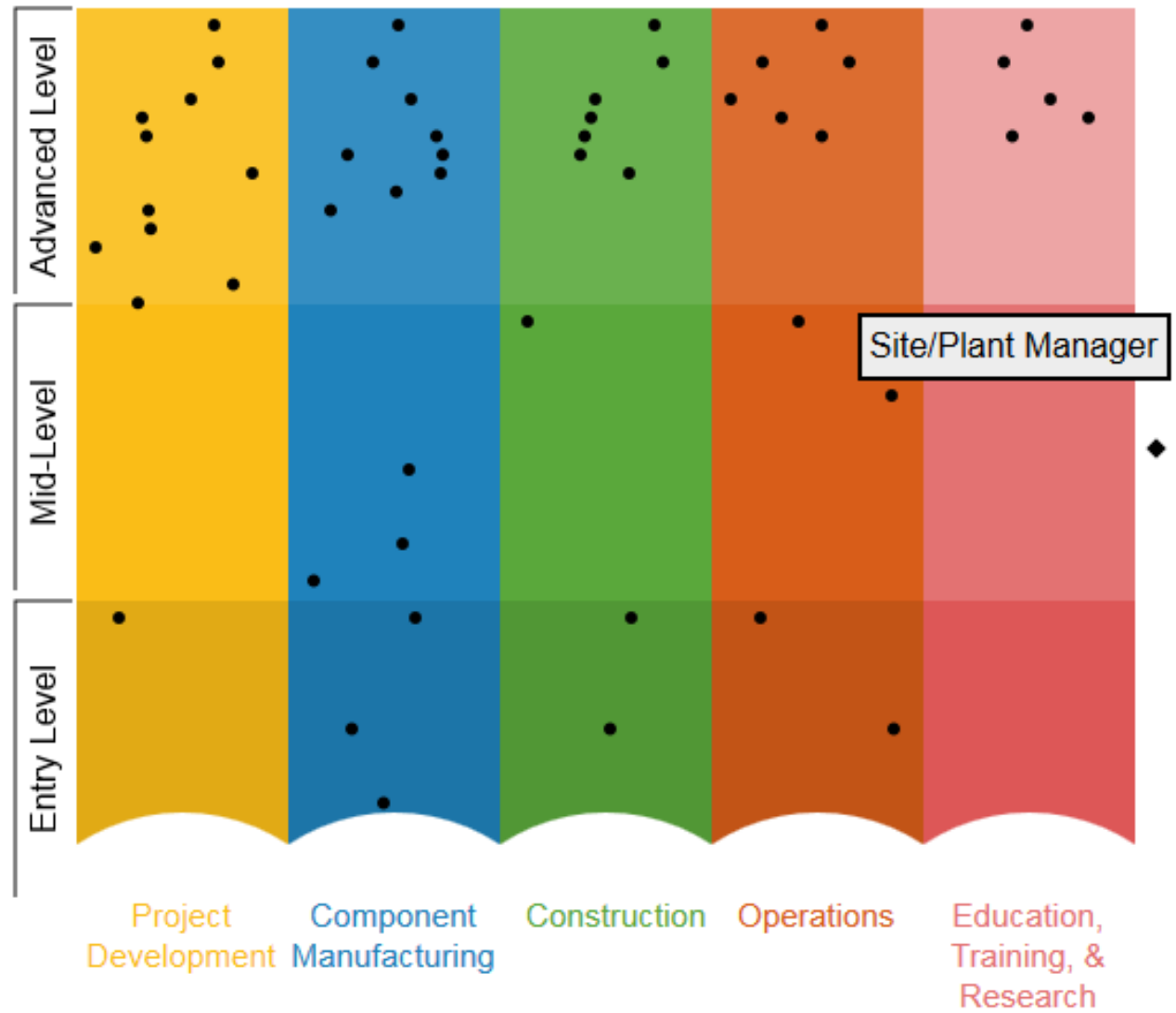
### Renewable energy

- Biogas
- Biomass
- Geothermal
- Hydropower
- Solar
- Waste-to-Energy
- Wave & Ocean Power
- Wind



# Wind Career Map

<http://energy.gov/eere/wind/wind-career-map>



- Job Title
- Career advancement and transition
- ◆ Transition from a career outside the wind industry



## Key questions

1. Human capacity in the region: is it sufficient? Where are priority areas to be addressed?
2. Which innovative uses of renewable energy create business opportunities in the Caribbean?
3. Electric vehicles: do they form a good business opportunity in the Caribbean?
4. Buildings: what are the most relevant technologies to help the building sector become more climate-friendly and more energy efficient? Any innovations where the Caribbean could be a world leader?



# Thank you....

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