



## Green Jobs Key Issues with Analyzing an Emerging Field April 2009

### The green definition is becoming ubiquitous

- What activities and effects count as green?
  - o Producing green products and services or practicing “green” (e.g. manufacturing of solar panels vs. bicycle manufacturing or organic foods store)?
  - o include only ARRA-defined activities or the broader green economy (ARRA mentions energy efficiency, building retrofitting, weatherization, renewable energy and smart grid while broader definitions include organic farming, wastewater recycling, fuel cells, carbon trading)?
- How to split green from non-green activities of the same company (e.g. utility or petroleum company also operates wind farms or biomass producer sells same product to non-green markets).
- How to measure partially green jobs? If a construction worker works one day on a LEED (Leadership in Energy and Environmental Design) certified school but the next day works on a coal-fired power plant, is he a partially green worker?
- How to account for non-green jobs (accountants) at green companies?
- How to avoid qualitative and judgmental factors? Do we want green jobs to be good paying jobs, to create pathways out of poverty, to save the planet etc? Do we want green energy to be produced only from non-food feedstocks?

### Classification is not discerning enough

A lot of the green activities are traditional activities, done using different materials or technologies or producing a green product/ service.

- NAICS codes are not detailed enough to separate green from non-green activities
- SOC codes are not detailed enough to break out green from non-green occupations
- The nature of existing industries and occupations is changing more rapidly than the creation of new occupations

### Terminology is misleading

- Green jobs or green collar jobs are associated with production-line type work and may mislead employers to undercount green jobs.
- Green industries evaluated as a life cycle may not seem so green, e.g. corn production uses scarce water resources and chemical fertilizers, corn ethanol production uses typically fossil-fuel electricity.

### Nuclear energy’s and renewable energy’s “green status” is questioned by certain groups

Nuclear power and hydropower produce zero CO2 emissions, the main culprit for climate change and global warming. However, some sources do not count them as “green.”

- Nuclear energy is not considered “green” by some because of the nuclear waste and issues with its disposal as well as safety issues despite the fact that it is a baseload energy source.
- Similarly, hydropower and tidal power generation are not considered “green” by some because of the environmental impact and effect on wildlife of such installations.

Even windmills, large solar installations, and transmissions lines bringing electricity from renewable sources to populated areas have all been cited by some as having negative unintended consequences, such as increased land use, effect on wildlife etc.

### NASWA Green Workgroup has worked to build common understanding of green jobs

- The group has collected a comprehensive database of state surveys, legislation, reports, definitions, and articles on green jobs.
- The group identified green industries and occupations and matched them to NAICS codes and SOC codes.

### BLS Green Workgroup approach hopes to overcome obstacles

Define green as economic activity, that:

- produces green services or products
- uses green processes

## **List of Proposed New Industries Submitted by Florida for Inclusion in 2012 NAICS**

- Growing corn for fuel production (currently in NAICS 111150)
- Growing plants for fuel production (currently in NAICS 111421)
- Manufacturing solar panels (currently included in NAICS 334413)
- Installation of solar panels (currently included in NAICS 238221 and 238222)
- Manufacturing solar reflecting insulation film (currently included in NAICS 326113)
- Installation of solar reflecting insulation film (currently in NAICS 238161, 238162, 238151, or 238152)
- Installation of solar water heaters (currently included in NAICS 238221 and 238222)
- Installation of windmills for commercial use (currently in NAICS 237130)
- Energy consulting (currently included in NAICS 541690)
- Energy research (currently included in NAICS 541712)
- Energy efficiency auditing
- Manufacturing green household cleaners (currently in NAICS 325199)
- Solar farms (currently in NAICS 221119)
- Converting tidal power to electric energy (currently in NAICS 221119)
- Converting wind power to electric energy (currently in NAICS 221119)
- Biomass companies
- Carbon offsets and trading (trading the right to emit CO<sub>2</sub>)
- Using cellulosic byproducts (such as orange, sugar cane, forestry) for ethanol production (currently in NAICS 325199)
- LEED (Leadership in Energy and Environmental Design) certified architectural design (currently in NAICS 541310)
- Building retrofitting to improve energy efficiency (currently in NAICS 236220)
- Using landfills to extract methane gas
- Manufacturing biodegradable bottles and containers

## Emerging Green Jobs

<b>EMERGING GREEN JOB TITLES</b>	
1	Energy auditor
2	Energy manager
3	Energy efficiency specialist
4	Sustainable development manager
5	Lighting efficiency professional
6	Carbon reduction manager
7	Advisor for management and energy
8	Distributed energy manager
9	Geothermal designer
10	Greenhouse gas assessor
11	Intelligent building specialist
12	Solar fabrication technician
13	Solar energy system installer
14	Solar commercial installation technician
15	Solar thermoelectric plant manager
16	Solar operations engineer
17	Wind field technician
18	Wind generating installer
19	Hydrogeologist
20	Geothermal power generation engineer
21	Geothermal plant operator
22	Landfill gas system technician
23	Biomethane gas collection system technician
24	Biomass plant operator
25	Carbon sequestration plant operator
26	Smart grid engineer
27	Environmental compliance specialist
28	Energy conservation representative
29	Green building and retrofit architect
30	Weatherization operations manager
31	Carbon emissions specialist
32	Carbon trader
33	Emission reduction manager
34	Climatologist
35	Greenhouse gas emissions verifier
36	Biomass Collectors
37	Hybrid and Fuel Cell Automotive Technicians

Source: For Occupations 1-11: Green Jobs: Survey of the Energy Industry, Association of Energy Engineers, 2009; For occupations 12-37: Green Jobs Guidebook: Employment Opportunities in the New Clean Economy, Environmental Defense Fund, September 2008  
 Prepared by Florida Agency for Workforce Innovation, Labor Market Statistics Center, April 2009