

# Green Jobs – Green New York (GJGNY) Job Impacts Study

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Federico Garcia -- ICF International (Project Phase 2)

Jennifer Meissner, Carley Murray, Michelle Salisbury -- NYSERDA  
Rohit Vaidya -- NMR Group (Project Phase 1)

# GJGNY Program Background

- GJGNY Act – signed into NY law 10/9/09
  - Promote energy efficiency, energy conservation, and installation of clean energy technologies
  - Reduce energy consumption and costs
  - Reduce greenhouse gas emissions
  - Support sustainable community development
  - Create green job opportunities, including new entrants and long-term unemployed/displaced workers
- Supported by revenue from sale of carbon emission credits under the Regional Greenhouse Gas Initiative
- Statewide program

# GJGNY Program Elements

- **Residential**
  - Free or low-cost energy assessments and financing through on-bill recovery (OBR) or Smart Energy loans
- **Multifamily**
  - Comprehensive building assessment to identify energy savings opportunities (coming soon, financing through OBR)
- **Small Business/Not-for-Profit (SB/NFP)**
  - Walk-through energy assessments and low-interest energy efficiency project financing through OBR
- **Workforce Development (WFD)**
  - Training programs/partnerships encourage development of a skilled clean-energy workforce that supports energy efficiency and the installation of clean technologies
- **Outreach & Marketing**
  - Service delivery in targeted communities with the support of Constituency Based Organizations (CBOs)
  - CBOs recruit customers into energy assessment and financing programs and encourage individuals to take advantage of clean energy training opportunities

# Study Objectives

- Estimate the number of direct, indirect, and induced jobs created/retained from GJGNY, including:
  - 2013 and projected 2015 impacts
  - Regional differences, disadvantaged communities
- Examine changes in worker skills and wage levels resulting from the GJGNY program

# Phased Approach

- **Phase 1 (NMR Group)**
  - Estimate number of direct jobs (in FTEs) attributable to GJGNY-funded program activities
  - Identify direct FTEs created in regions
  - Collect data on other job-related impacts (wages, skills)
  - Provide inputs to macroeconomic impact analysis
- **Phase 2 (ICF International)**
  - Conduct macroeconomic impact analysis to determine indirect and induced job effects
  - Perform wage comparison

# Important Notes

- Direct jobs (in FTEs) are point-in-time estimates by survey respondents
- Due to the close linkage of GJGNY with ratepayer-funded programs, Phase 1 survey research carefully addressed attribution and attempted to isolate the GJGNY impacts
- Macroeconomic analysis output is gross jobs and is not net of potential impacts of alternative spending of the GJGNY funds
- Results should not be added/compared to results from jobs studies on other NYSERDA programs or portfolios

# Phase 1 Analysis & Results

# Phase 1: Direct Jobs Analysis

- **2013 New Jobs:** Workers hired from program inception to support GJGNY-related work
- **2013 Retained Jobs:** Workers retained specifically to support GJGNY-related work
- **2013 Up-skilled and Up-waged Jobs:** Labor income associated with up-skilled workers who subsequently received higher wages (collected hourly wage data)
- **2015 Jobs:** Includes projection of all workers hired or retained from program inception to 2015, assuming program funding continues at current level



# Phase 1: Interviews Completed

Surveys or In-depth Interviews	Completed Interviews	Population
Home Performance w/Energy Star (HPwES) Contractors	71	407
HPwES Loan Processors and Providers	5	7
HPwES Implementer, QA Contractor	2	2
CBOs	18	18
CBO Training & Implementation Contractor	1	1
WFD Training Partners (OJT PON 2033B)	22	36
WFD Training Partners (non-OJT PONS)	8	14
Multifamily Performance Program (MPP) Performance Partners	25	39
MPP Participants	40	268
GJGNY Marketer	1	1
MPP Implementer, QA Contractor	2	2
SBNFP Audit Contractors	3	4
SBNFP Project Expeditors	3	3
SBNFP Lenders	4	6

# Phase 1: Total Direct FTEs in 2013

Industry Group	Total Direct FTEs <sup>α</sup>	Current Wage <sup>β</sup>
<b>Total</b> (new FTEs added <u>plus</u> retained FTEs )	<b>906</b>	<b>\$20.01</b>
<b>Sectors with most total FTEs</b>		
Engineering Services	325	\$22.02
Residential Remodelers	155	\$15.08
Drywall and Insulation Contractors	90	\$17.91
Building Inspection Services	83	\$19.33
Plumbing, Heating and Air-conditioning Contractors	77	\$15.77

<sup>α</sup> New FTEs added because of GJGNY-related work + FTEs that would have been let go without GJGNY-related work, but were retained because of that work. New jobs added plus retained jobs.

<sup>β</sup> Weighted average hourly wage based on respondents reporting wage information.

Preliminary results 9-12-13.

# Phase 1: FTEs Up-skilled & Up-waged in 2013

Industry Group	Up-skilled & Up-waged FTEs <sup>α</sup>	Wage Increase <sup>β</sup>	Current Wage <sup>β</sup>
<b>Total up-skilled and up-waged FTEs</b>	<b>282</b>	<b>\$4.24</b>	<b>\$21.65</b>
<b>Sectors with most FTEs up-skilled and up-waged</b>			
Engineering Services	142	\$3.59	\$20.85
Drywall and Insulation Contractors	38	\$4.89	\$22.25
Residential Remodelers	33	\$6.27	\$22.92
Plumbing, Heating and Air-conditioning Contractors	24	\$3.96	\$18.65
Building Inspection Services	14	\$3.25	\$20.68

<sup>α</sup> FTEs for existing jobs that saw an hourly wage increase because of increased responsibility for GJGNY related work

<sup>β</sup> Weighted average hourly wage increase; wage was reported by respondents.

Preliminary results 9-12-13.

# Phase 1: Direct FTEs in Disadvantaged Communities in 2013

Region	Direct FTEs <sup>α</sup>	% of Total
<b>Total</b> (new FTEs added <u>plus</u> retained FTEs )	<b>906</b>	<b>100%</b>
<b>Total in disadvantaged communities</b>	<b>156</b>	<b>17.2%</b>
<b>Regions with most direct FTEs</b>		
Southern Tier	56	6.1%
Mid-Hudson & Westchester	40	4.4%
Central	13	1.5%
Bronx	13	1.4%
Western	9	1.0%

<sup>α</sup> New FTEs added because of GJGNY-related work + FTEs that would have been let go without GJGNY-related work, but were retained because of that work. New jobs added plus retained jobs.

Preliminary results 9-12-13.

# Phase 1: Total Direct FTEs Projected by 2015

Industry Group	Total Direct FTEs <sup>α</sup>
<b>Total FTEs by 2015</b>	<b>2,546</b>
<b>Sectors with most total FTEs by 2015</b>	
Plumbing, Heating and Air-conditioning Contractors	706
Residential Remodelers	529
Engineering Services	478
Drywall and Insulation Contractors	419
Building Inspection Services	122

<sup>α</sup> 2013 added FTEs + 2013 retained FTEs + 2015 expected FTEs added.  
Preliminary results 9-12-13.

# Phase 2 Analysis & Results

## Phase 2: Analytic Approach

- New York State IMPLAN model
  - Configure and run modeling scenarios statewide for 2013 and 2015
  - Input for new and retained jobs used direct FTE and wage data from Phase I
  - Input for up-skilled and up-waged jobs used wage increases for associated FTEs
- Conduct comparison of wages for up-skilled/up-waged workers

# Modeling Framework

## Direct Economic Impacts

Phase 1

**Direct GJGNY Jobs  
(new and retained)**

**Direct GJGNY up-  
skilled and up-  
waged labor  
income**

Purchases of goods  
and services

Purchases of goods  
and services

**e.g.  
construction  
materials and  
services**

**e.g.  
engineering,  
professional  
services**

Purchases of  
goods and  
services

**Consumer goods and services**

Sales and jobs from household spending on food, housing, clothing, health, education, transportation, use of government services, etc.

Indirect Economic Impacts

Induced Economic Impacts

Phase 2



## Phase 2: Economic Modeling Output

- **Jobs** – Created by industry, based on the output per worker and output impacts for each industry.
- **Labor Income** – A component of the value added; consists of all forms of job income. Consistent with I/O terminology, IMPLAN defines this as the sum of the worker compensation and proprietor's income.
- **Output** – Represents the total value of the output from each industry, which is attributable to program jobs and industry spending.
- **Gross State Product (GSP)** – Catch-all for payments made by individual industry sectors to workers, interests, profits, and indirect business taxes.

# Phase 2: Summary Results

- In 2013 GJGNY program supports approximately 1,590 NYS jobs and nearly \$125M in GSP.
- By 2015, GJGNY is expected to support approximately 4,360 NYS jobs and nearly \$342M in GSP
- Every direct job supports 1.6 jobs and every direct dollar of GSP supports nearly \$2 total GSP

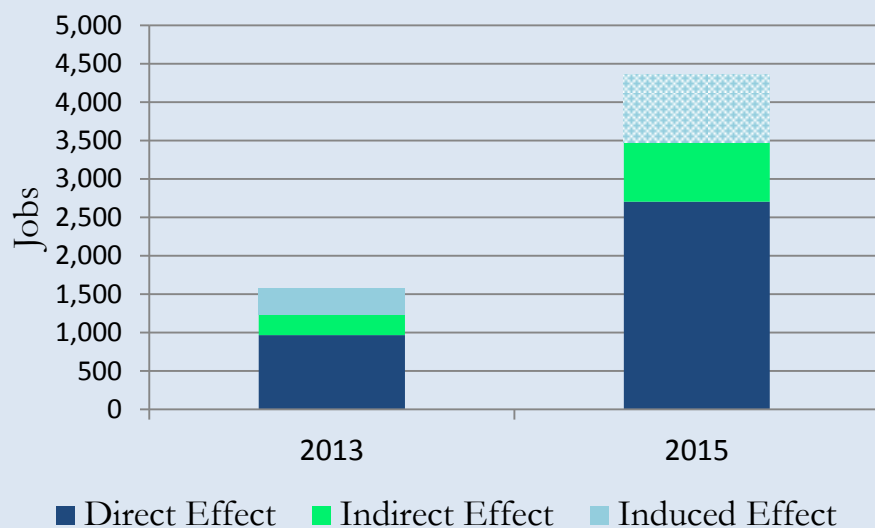
Description	Total Impact (Direct, Indirect, Induced)	
	2013	2015
<b>Jobs</b>	1,590	4,360
<b>Labor Income (million 2013\$)</b>	\$91.2	\$238.4
<b>GSP, Value added (million 2013\$)</b>	\$124.9	\$341.5
<b>Output (million 2013\$)</b>	\$223.2	\$637.1

Source: IMPLAN results. Preliminary results 9-12-13.

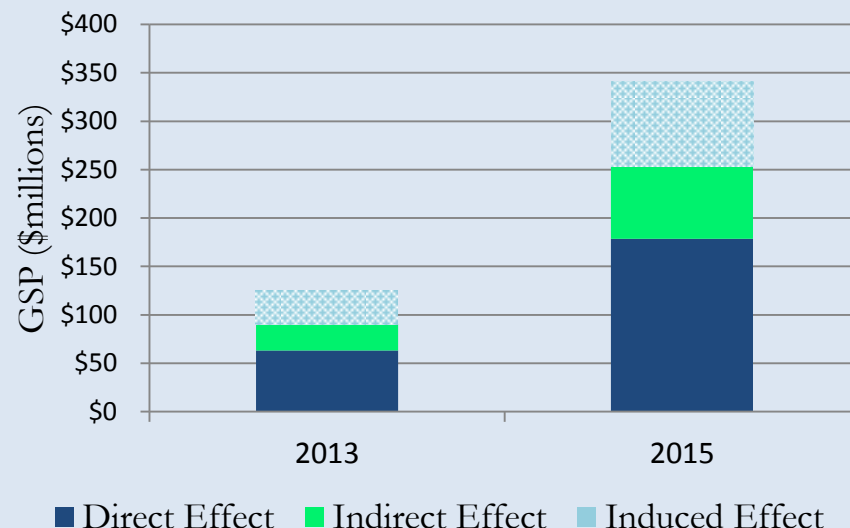
# Phase 2: 2013 vs. 2015 Results

- 2015 results signify progressive expected growth of direct jobs and total effect
- Direct jobs account for roughly 60% of total job impacts
- Growth in 2015 impact driven by growth in direct jobs

### Job Impacts



### Gross State Product (GSP) Impacts



Source: IMPLAN results. Preliminary results 9-12-13.

# Phase 2: Economic Impacts by Job Type, 2013

- Most significant impacts result from **new jobs**
- Slightly higher jobs multiplier from **retained jobs**, due to higher labor income-per-worker

Job Type	Jobs	Labor Income	GSP	Output	Jobs Multiplier	GSP Multiplier
2013 New Jobs	960	\$ 52,957,000	\$ 73,851,000	\$ 137,383,000	1.61	1.97
2013 Retained Jobs	610	\$ 37,583,000	\$ 49,846,000	\$ 84,098,000	1.64	1.93
2013 Up-Skilled/ Up-Waged Jobs	10	\$ 656,000	\$ 1,161,000	\$ 1,765,000	N/A	N/A

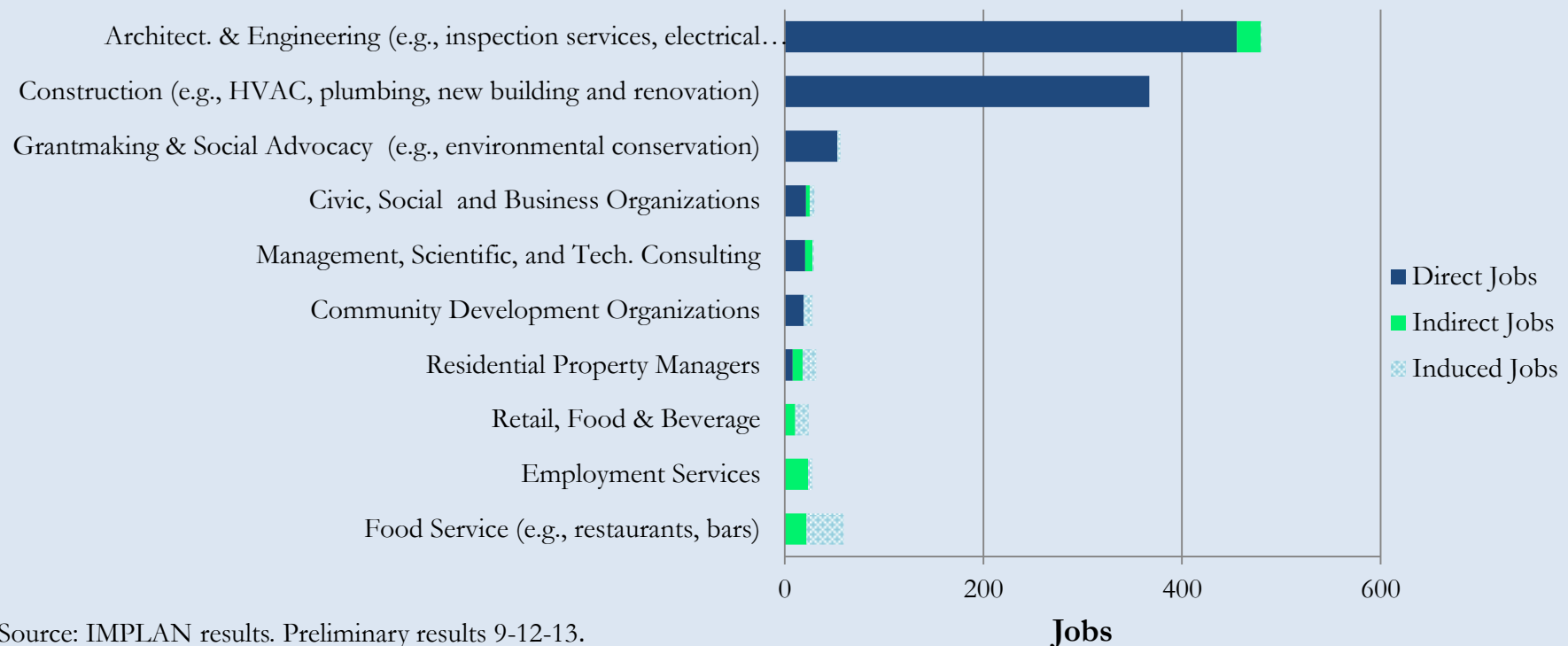
Note: Totals include direct, indirect, and induced effects

Source: IMPLAN results, job figures rounded to the nearest ten, dollar figures rounded to the nearest thousand so totals may not sum

Preliminary results 9-12-13.

# Phase 2: 2013 Results by Industry

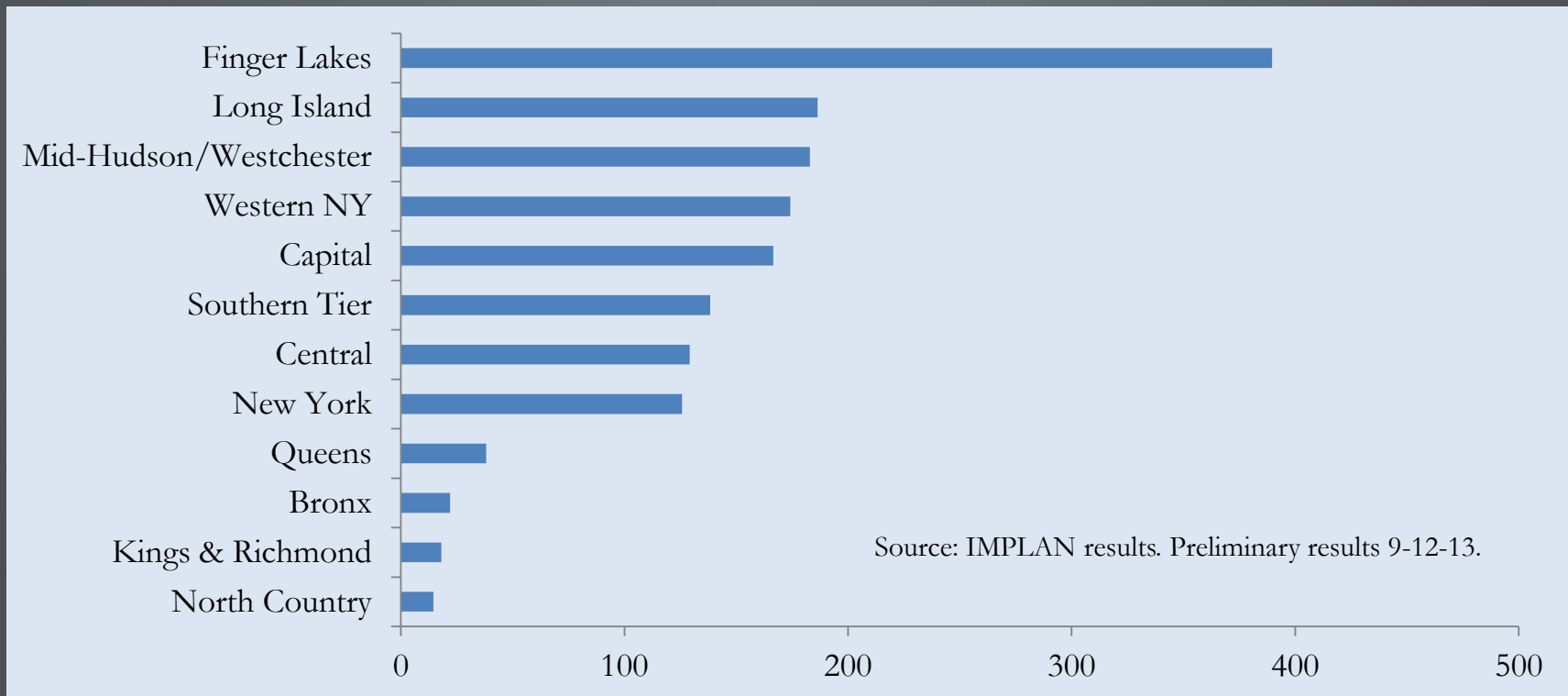
- Architecture & Engineering and Construction industries drive job impacts
- Same top two industries dominate for 2015, but with Construction overtaking Architecture & Engineering



Source: IMPLAN results. Preliminary results 9-12-13.

# Phase 2: Regional Results, 2013

- Total job impacts, by region, in 2013
- Finger Lakes stands out as the region with the largest 2013 impacts (390 jobs), followed by Long Island (186 jobs)



## Phase 2: Wage Comparison Results

- Average annual wage difference between up-skilled/up-waged workers' previous and current wage: 18% increase
- Industries with greater-than-average wage difference:
  - Residential Remodelers: 38%
  - Drywall and insulation contractors: 28%
  - Plumbing, heating and air -conditioning contractors: 27%
  - Engineering Services: 21%
  - Building Inspection Services: 19%
- Industries with a less-than-average wage difference:
  - Other Management Consulting Services: 9%
  - Other Social Advocacy Organizations: 13%
  - Environment, Conservation and Wildlife Organizations: 15%
  - New Single-family housing construction: 17%

Preliminary results 9-12-13.

# Questions?

Federico Garcia -- ICF International  
Federico.Garcia@icfi.com  
[www.icfi.com](http://www.icfi.com)

Jennifer Meissner -- NYSERDA  
jam@nyserda.ny.gov

Rohit Vaidya -- NMR Group  
rvaidya@nmrgroupinc.com