



## Data Spotlight

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### Which (Green) Project is Best for your Region? Green Jobs, Part 2

#### Assessing Workforce and Economic Impacts, Return on Investment of stimulus projects

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*Last month we took a look at some occupations that would likely be affected by the new administration's "green policy." [To review last month's article click here.](#) This month we want to bring in more perspectives like working layoff challenges into the green job equation and learning how to assess regional development projects (including "green" ones) on the basis of multiplier effects, long-term vs. short-term effects, cost per job created/saved, and fiscal impacts.*

Contact Information:

Rob Sentz

[rob@economicmodeling.com](mailto:rob@economicmodeling.com)

208.883.3500

## A Review

In our last article, we talked about the fact that many green jobs cannot be categorized according to actual standard [occupation codes](#) (e.g., accountant, mechanic, registered nurse, elementary school teacher). That sort of standardization might happen in the future, but for now we have to define green jobs as those directly tied to the production of green products or services: activities like installing more energy efficient HVAC systems, using new building materials in construction, designing and manufacturing alternative energy technology, or developing mass transit in suburban and urban areas.

These types of projects are likely to see a large amount of funding from the federal government as part of the American Recovery and Reinvestment Act, commonly known as “the stimulus package,” that is currently being debated and amended in Congress. As a result, state and local stakeholders in workforce investment, economic development, and education are scrambling to develop plans for (1) competing for these funds, (2) using them most efficiently, and (3) being highly transparent and accountable for results.

## Factoring in the economic crisis and the stimulus package

Just like you, we have been watching the news and following the discussions about this stimulus package. We are also paying a lot of attention to the sorts of things that the Obama administration wants to spend money on, and would like to review what sort of things could potentially have the best local workforce and economic impacts.

Before we get to those, let’s first consider what has happened in recent months and how those events have had some significant ramifications on policy for green jobs. Before the economy took a nosedive, the green movement was building a lot of momentum. Global warming, carbon credits, carbon trading, hybrid cars, LEED, and alternative energy were all grabbing headlines and investments. But the writing of this article comes just after more than 70,000 job cuts were announced by major employers nationwide, in a single day. As a result of our economic crisis, the nation’s attention has changed ever so slightly, and what was once “*green jobs*” (emphasis on *green*) has become “green *jobs*,” or perhaps even just “*any jobs*.” Accordingly, in this article we are expanding our perspective to include both green and non-green regional development projects. Our point is that similar approaches can be used in evaluating both kinds of projects, even though truly green projects can have additional long-term benefits compared to non-green, all other things being equal.

How can the education, workforce, and economic development communities respond? We believe that it is crucial for local leaders to understand all projects, but especially those claiming to be “green,” based on their real return-on-investment in terms of economic impact, and lasting job creation, and positive state and local government fiscal effect. While this is not the only perspective for evaluating investments, it is a very important and foundational one. We hope to examine more perspectives in future articles.

## **A Data-Driven Approach to Economic Stimulus Investments**

So, with these things in mind we want to review some information to help workforce, education and economic developers use stimulus funds at the local level to actually help those most in need of new employment. We will also demonstrate how you can use regional data and impact analysis to identify and address the questions that are key to your region's economic health and revitalization.

Here are some of the major issues we consider important to developing a framework for project evaluation:

### **1. Accountability**

It seems that every state and region in the U.S. is expectantly waiting for the federal government to send them a stimulus check. But it won't be that simple. With some funding likely to take the form of competitive grants, and President Obama requiring rigorous accountability for funds used, areas and organizations will need to be able to bring some solid data to support their project plans and post-project reports. The President has even promised to make this information public on a web site: <http://www.recovery.gov>.

### **2. Infrastructure vs. Stimulus**

Second, a major emphasis of the current package is infrastructure spending in order to create jobs at the local level. However, not all infrastructure projects are created equal with respect to job creation. While infrastructure is important to the functioning of our economy, we can run into a chicken-and-egg problem: if our states and communities don't have stable job bases, they can't use the infrastructure to its capacity and they also won't be fiscally stable. And if they aren't fiscally stable, they won't be able to maintain the infrastructure. In addition, infrastructure improvements often spend more money on capital expenditures than local jobs, and many jobs will be short-lived (see "Short-term vs. long-term effects" below). However, if infrastructure improvements can be convincingly shown to be prerequisite to workforce, education, or industry needs, then they can have great economic benefits. *We will discuss this issue further in the next edition.*

### **3. Regional Workforce and Economic Impact Assessments**

Having access to and providing solid regional analysis coupled with local workforce and economic impact numbers is key. Being able to show these numbers will help your proposal, but more than that, you need to understand which project will have the largest regional workforce impact. Because of the large number of layoffs a lot of people could be affected by these decisions. Thus, you want to bring the best data and analysis together before you decide. Key measures of any economic stimulus at the regional level include direct job creation, multiplier effects, and cost per job.

## **Analyzing the Impacts**

The economic crisis and stimulus package have brought about a renewed interest in fiscal impact modeling, input/output, and economic impact modeling. In addition, the relatively new art of

looking at workforce characteristics is generating a lot of interest and proving to be useful. This has to do with the fact that organizations and areas that would like to get their fair share of the stimulus package and using figures generated by these tools serve as a justification for receiving the federal spending.

**To illustrate how you can use these tools to benefit your region we have put together the following hypothetical example. This example was constructed using EMSI's web-based data tool, [Strategic Advantage](#).**

First, let's imagine we are the mayor of a town that just lost a lot of jobs because of layoffs. Three different groups have put together proposals that they would like the city to submit to bring some of the stimulus money to the area. These proposals are not necessarily exclusive, but we want to evaluate each of them from a basic return-on-investment perspective.

**Project 1**

The first group wants **\$300 million** to improve the downtown roadways and sidewalks, as well as a new overpass and widening of a nearby stretch of highway. It estimates that it could provide jobs for as many as **500 local workers**.

Scenario 1 - Downtown Road and Park Improvements	
Investment Amount	\$300 Million
Estimated Job Creation	500 jobs in Highway, street, and bridge construction
Jobs Multiplier	1.58
Indirect Job Creation	290 jobs
Total Job Creation	790 jobs
Cost per job (direct and indirect)	\$380,000

Using an input-output model we discover that **highway, street, and bridge construction** has a local jobs **multiplier of 1.58**. So for every job created in construction another half a job is created somewhere else in the region. This means that the addition of 500 construction jobs could potentially spell an additional 292 area jobs. The model tells us that most of the indirect job creation would occur in **local government, restaurants, and health care**. In addition local or regional concrete mixers, concrete block and brick manufacturers, stone cutters, asphalt pavers, and mining operations stand to benefit. *(Notice our regional perspective; more jobs might be created/saved elsewhere in the nation or even overseas due to expanding ripple effects. However, we are focusing on regional benefits.)*

### Project 2

The second group wants **\$180 million** to retrofit all of the local schools and government offices with more energy efficient HVAC systems. It estimates that it work could create an additional **400 jobs**.

Scenario 2 - HVAC Improvements in Schools and Government Facilities	
Investment Amount	\$200 Million
Estimated Job Creation	400 jobs in HVAC
Jobs Multiplier	1.8
Indirect Job Creation	290 jobs
Total Job Creation	<b>720 jobs</b>
Cost per job (direct and indirect)	\$277,000

You once again run some input-output analysis and discover that non-residential HVAC installation has a local jobs multiplier of **1.8** and that an additional **320 jobs** would be created, largely in local government, restaurants, health care, and retail sectors. (*We could also look at the money saved by local government annually due to decreased energy costs, but that is beyond the scope of the current paper. And in that case, we would also have to account for the fact that these savings would translate directly into lost sales for the energy sector, possibly balancing out any job-creation benefits.*)

### Project 3

Finally, a third group, concerned about status of the local construction machinery manufacturing company, would like to figure out a way to provide employment to the 1,000 workers who were recently laid off. First, it indicates that the loss of 1,000 jobs in this sector, which has a jobs multiplier of 2.8, could mean the loss of an additional **1,800 jobs (2,800 total)** in the county. To counteract this change the group would like to attract a turbine manufacturing company that could employ as many as **500 workers**. It estimates that **\$28 million** would be needed to establish a new learning lab, classrooms, and curriculum at the local community college to train new workers. Also, it would like another **\$25 million** to retrofit some of the vacated manufacturing facilities so that they would be more suitable for the in-demand turbine manufacturing.

Running the model again, you discover that the turbine manufacturer has a jobs multiplier of **4.8** (much higher than the other two), and an average earnings per worker of **\$70,000 per year**

(which includes benefits and owner profits). Bringing this company to the region could create as many as **1,900 additional jobs** due to indirect effects.

In addition, they would also like to use some other vacated facilities to bring in a **pharmaceutical preparation manufacturer** that is interested in cutting its costs by moving to the area. It would be interested in supplying another **300 jobs**. The jobs multiplier for this company is **2.2**. So the county could pick up an additional **360 jobs due to indirect effects**. This company is seeking **\$40 million** in renovation, training, and incentives.

Scenario 3 - Training and Infrastructure Improvement for Turbine and Pharma Industries	
Investment Amount	\$83 Million
Estimated Job Creation	800 jobs between the Turbine and Pharma industries
Jobs Multiplier	4.8 (Turbine), 2.2 (Pharma)
Indirect Job Creation	2,260 jobs
Total Job Creation	3,060 jobs
Cost per job (direct and indirect)	\$27,125

## Short-term vs. Long-term Thinking

Now while all of these projects could really help the region, the third has the largest and most **long-term jobs impact**. With the first two, remember that once the road construction/ infrastructure projects and HVAC retrofitting are finished, there is a high likelihood that these jobs would evaporate due to a lack of regional demand to sustain them (or they may have even been “imported” from outside the area in the first place). Also notice the high cost to create just one job in the first two scenarios (\$380,000 and \$270,000 respectively). The reason is that the first two, which are more closely associated with infrastructure improvements, have heavier costs built in because of the need to purchase the materials needed to complete these projects. Also, the first two examples are short-term projects and much more analysis would need to be done in order to link them to long-term job creation and local economic revitalization.

There is more: Short-term projects often carry with them boom and bust problems. They put short-term stress on school, transportation, and other public services, and sometimes leave excess capacity and added public burdens in their wake. Where these result in long-term increases in local taxes, the region *could* actually be left in a less competitive position than before, actually costing jobs in the long term. Of course, many projects won’t suffer from these problems, and a carefully conducted fiscal impact analysis can identify them in advance.

The third example, though, is very closely tied to actual job stimulus. The spending is going directly toward training and infrastructure that can support new “basic” industry opportunities with high multiplier effects. In addition, the money is being used to make the county more appealing to these growing industry sectors and their suppliers. Also notice that the cost per job is much lower (\$27,125) and the multipliers are much, much higher (4.8 and 2.2 respectively). This primarily has to do with the fact that you are creating what is termed as “basic” industry growth—or that sort of industry that brings money into the region long-term. Non-basic industries tend to spend money that is already in the region. Finally, notice that we haven’t worked solely to create “green jobs.” However, the building improvements at the community college, and the manufacturing facilities, not to mention the fact that the industry that could be recruited could build wind turbines, actually makes this a very “green” project. Even for “green” projects, we must remember that from a regional perspective it is basic industries, and the jobs and income they support, that drive regional economies.

In this case the third option is going to be very attractive for those that are trying to figure out the best places to spend the stimulus dollars.

## **Infrastructure Improvement Reprieval**

An important thrust of this discussion piece is that because infrastructure improvement projects will sometimes produce large short-run but negligible long-run effects, one should be cautious in courting these projects. Before concluding, however, some careful caveat is in order. Economic development in many parts of the United States suffers for want of effective infrastructure. Development is constrained by insufficient transportation systems, internet access, healthcare facilities, and even the arts and recreation infrastructure needed to attract and retain a professional workforce. The point is not that infrastructure projects should be dismissed as job creators, but that the analytic bar for justifying these projects should be set higher than for projects that bring in basic industries.

## **Conclusion**

These examples are intended to show how powerful and useful economic and workforce data can be and how useful it is when it comes to making well-informed decisions and understanding which project will be best for the community.

There is of course a lot of other analysis that can be performed here (skills compatibility, looking at regional purchasing to determine how to keep money from leaking from the region, and educational attainment and training programs that would complement these activities), but this is a good first step to understanding what investment will have the largest regional impact.

If you would like help assessing economic stimulus projects in your region, please contact us. We have customized consulting services as well as a suite of web-based tools that will allow you

to perform detailed workforce and economic analysis. In addition, we have recently added fiscal impact modeling to our array of services.

Please contact us for more information:

Rob Sentz

([rob@economicmodeling.com](mailto:rob@economicmodeling.com)).

866.999.3674