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FOREWORD

New York State's investment of nearly $1 billion in a massive solar panel factory in Buffalo is the most "mega" in a series of mega-projects Governor Andrew Cuomo has announced as part of his ambitious Upstate Revitalization Initiative.

The governor says the state government's financial assistance to SolarCity, the nation's leading installer of residential solar energy systems, will transform the western New York economy "by creating a vibrant clean energy sector, and bringing thousands of new jobs in the process."

But is it a good deal for taxpayers?

John Bacheller, a former top official of the state Empire State Development Corp., seeks answers to that question in this independent analysis, "Solar Subsidy: The Big Risk Embedded in Buffalo's Billion."

Based on his review of the underlying documentation for the SolarCity project, Bacheller says:

- *The project's impact on employment has been "greatly overstated" by counting sales and installation jobs that an expanding SolarCity would be expected to create in New York even if the plant were located elsewhere.*
- *The underlying capital financing arrangement will expose New York taxpayers to considerably more financial and economic risk than the state's previous economic development deals.*
- *There still appear to be unanswered questions about how the state will ensure the company complies with its job-creation guarantees.*

The issue of whether state governments should be handing over any tax dollars to subsidize private corporations remains hotly debated all over the country. But even accepting the normal premises of economic development programs in New York, the SolarCity project—and others modeled on it—raise troubling new questions.

Solar Subsidy

The Big Risk Embedded in Buffalo's Billion

by John Bacheller

(This independent analysis is cross-posted with the author's permission from Policy by Numbers New York.)

The decision by the nation's largest solar panel provider to locate a state-of-the-art manufacturing plant in Buffalo, and to create other jobs in Western New York, could be a needed shot in the arm for a city and a region that's been declining economically for many years. But there are significant risks and unanswered questions associated with the state government's willingness to commit the bulk of its "Buffalo Billion" resources to the massive SolarCity factory on the site of the former RiverBend steel plant.

A review of key documents for the project reveals the following:

- State taxpayers will be exposed to an unusually high degree of risk by the unprecedented structure of the SolarCity deal, under which Fort Schuyler Management Corp., a non-profit subsidiary of the State University's College of Nanoscale Science and Engineering, is building the factory for the company, and will retain ownership. SolarCity's up-front capital investment in the project is thus limited, weakening its incentive to remain in Buffalo after its dollar-a-year lease of the building expires in 10 years.
- The project's net employment impact has been greatly overstated. Some of the promised 5,000 new jobs to be generated in New York by the SolarCity project will be sales and installation positions that would be created in the state even if the same factory was successfully constructed and operated anywhere else in the world, while others will be jobs at other companies that are not parties to the jobs agreement between SolarCity and FSMC.
- The relationship between CNSE/FSMC and Empire State Development leaves a number of open questions around the job requirements associated with the project and the responsibility for ensuring that job creation promises will be met.
- Although FSMC is a state-created entity, controlled by the State University and CNSE, it lacks fundamental mechanisms to ensure transparency and public accountability, including publicly disclosed decision processes, criteria, and analyses of project fiscal and economic benefits and costs.

SolarCity is one of three high-tech companies ultimately controlled by Elon Musk, the visionary entrepreneur who also founded Tesla, a maker of high-performance electric cars, and SpaceX, which makes rockets and spacecraft.

After a series of financial maneuvers designed to improve SolarCity's financial condition, Musk recent announced that Tesla would acquire the solar panel company. It remains to be seen how or whether the Tesla-SolarCity merger will ultimately affect the Buffalo project.

The Use of Business Location Incentives

The use of financial incentives by governments to attract businesses has long been controversial.

From a critical perspective, incentives can be seen as inefficient and prone to favoritism, because they offer benefits to particular firms chosen by a government agency. Incentives are inherently unfair to competitors who do not receive them. The existence of economic development incentives encourages businesses to game the system by claiming that, without government assistance, they might not locate within a state or expand or otherwise upgrade operations. And by offering targeted incentives to selected companies, governments avoid changes in tax policy that would be more costly, politically as well as fiscally.

From the perspective of elected officials, incentives are often viewed as a necessary evil. By offering incentives to particular businesses that promise to create or retain jobs, the state can avoid giving expensive tax breaks to all businesses. The discretionary nature of such programs reduces the overall cost of business retention and attraction compared to a universally available tax break. And, because most states (and localities) use some form of incentive as an attraction and retention tool, no one dares unilaterally disarm.

However, public money should not ultimately *supplant* private investment. The purpose of economic development agencies is to encourage private sector businesses to invest their own resources to create or retain jobs. These agencies do so by providing financial assistance for capital projects and worker training. In determining whether to provide assistance, and how much to offer, these agencies must assess how much assistance is necessary, the return on public investment that would result, and the risk that promised outcomes will not be achieved. As public agencies, they must operate in a relatively transparent fashion, providing public information about project assistance, benefits and costs, and company compliance with investment and job commitments.

The largest incentive package in New York's history—packaged a decade ago by Empire State Development[1] for the AMD/GlobalFoundries semiconductor chip fab in Malta—was consistent with these guidelines. It involved State grants totaling $650 million (and more in potential tax breaks) to create a promised 1,200 jobs.

To be sure, the state's subsidy of the GlobalFoundries plant was criticized in some quarters as "corporate welfare" and an unprecedented "giveaway." However, the company's initial investment of $1.7 billion was much larger than the state government's.[2] In seeking to become the site of a planned new chip fab plant—of which there are only a handful in the world—New York faced competition from the State of Saxony in Germany, where the company had an existing facility, and which had made an equally large offer.

The GlobalFoundries plant was paid for and equipped by the company itself, with the state providing a grant equivalent to 27% of the total cost. Ten years later, the plant has been expanded to directly employ 3,600 people, with a total investment for building and equipment of $6.9 billion.[3]

A Nice Deal if You Can Get It

Governor Andrew Cuomo has favored a new model of economic development financing while championing a number of high-profile, high-technology projects, managed by the State University of New York's College of Nanoscale Science and Engineering (CNSE) through a non-profit subsidiary, Fort Schuyler Management Corporation (FSMC). The state sends money through the Empire State Development Corporation to FSMC, which builds manufacturing facilities at no capital cost to the companies that will use them.

Fort Schuyler Management Corporation is one of several private non-profit organizations created to facilitate SUNY's mission. FSMC, for example, was created by the SUNY Research Foundation and the Institute of Technology Foundation at Utica/Rome, Inc (ITSC). Although FSMC and ITSC are private, 501(c)3 corporations, not public entities, each has a Board of Directors whose members largely come from the ranks of SUNY administrators.

The largest of the technology projects—SolarCity, a solar panel manufacturer—like other CNSE/FSMC developments, is financed in a completely different way than earlier business attractions in New York state.[4] The CNSE/SUNY-related 501(c)3 non-profit is building and equipping the solar panel factory at a total cost to the state of $959 million, including $200 million for environmental remediation of the former steel plant site on which the factory is being built. Fort Schuyler will continue to own the facility once it is completed.

The SolarCity project originally promised 1,450 jobs at the manufacturing facility. In late 2015, however, the commitment was reduced by almost two-thirds to 500 jobs, which must be maintained for five years after creation. Specifically, SolarCity promises[5] to "*employ and hire as [SolarCity] employees, personnel for a minimum of 1,460 jobs headquartered in the City of Buffalo, New York, with…500 of such jobs for the manufacturing operation at the manufacturing facility over the initial two (2) years of the collaboration commencing on the Manufacturing Facility Completion date…[SolarCity] commits to the retention of these jobs for a period of no less than five (5) years.*"[6]

In addition, the company promises, "*in addition to the 1,460 jobs [above], to employ for a minimum of 2,000 jobs over the five years of the collaboration following manufacturing completion to be located in New York State. [SolarCity] commits to the retention of these jobs for a period of no less than five (5) years.*"

Finally, SolarCity promises to employ 5,000 people in total in New York state (which may include sales and installation support jobs) by the 10th anniversary of the factory completion date.

As long as SolarCity meets the agreed-upon job requirements, it has access to a fully equipped facility, totally free of capital costs. (It is also eligible for significant tax breaks)[7]. As a result, no private capital dollars towards the cost of the facility and its equipment are leveraged by the state's contribution of more than $900 million in public dollars. In effect, they are a gift to SolarCity from the people of the State of New York, for a lease cost of $1 per year.

Here is the language of the Memorandum of Agreement[8] (MOA) governing the project:

[Fort Schuyler Management Corporation] is responsible at its cost to achieve manufacturing facility completion, including to acquire all manufacturing equipment and to provide for all manufacturing equipment to be delivered to the manufacturing facility. Once manufacturing facility completion has been achieved, including all manufacturing equipment has been acquired and delivered to the manufacturing facility, [SolarCity] is responsible at its cost to achieve manufacturing equipment commissioning and full production output, provided however, that the cost of manufacturing equipment commissioning shall be funded by [Fort Schuyler Management Corporation].

[SolarCity] shall lease the manufacturing facility and manufacturing equipment

for the manufacturing equipment from [Fort Schuyler Management Corporation] for a period of ten years for the sole consideration of one dollar $1.00 US per year….

To understand the value of this gift, recognize that for SolarCity to undertake the project itself, it would have two alternatives. It could go to the credit market and attempt to sell bonds, perhaps at junk bond interest rates, given the young company's limited track record. Or, it could sell part of itself, by issuing additional stock. Either approach would result in existing owners holding a smaller portion of the company.

Because SolarCity has access to free capital from New York State to construct and equip the manufacturing facility that it will operate, the financial risk to the company's operations is greatly reduced. As long as it meets the contractual employment target for ten years, it need not worry about paying substantial fixed costs.

Through Fort Schuyler, New York State will face significant risks, however. And unlike the company's shareholders, FSMC and New York State will not receive a direct financial benefit from any profits that SolarCity generates.

Shifting Risk to New York State

The first risk that New York faces is that the company will be unable to meet its employment objectives or fail outright, despite the state's huge investment. The SolarCity MOA contains a rigid set of job creation and retention requirements for a ten-year period that will be difficult to enforce.

The MOA's recapture requirements provide that in any year that the company fails to meet its employment mandate, it must pay a penalty of $41.2 million. Because of the long 10-year term of the job creation and maintenance requirements, it is quite likely that a significant recession could occur during the contract period. But because the job maintenance requirements do not include any tolerance for such an event, there is a significant likelihood that the company will be in default at some point during that period.

A 30 percent federal tax credit for residential solar installations is scheduled to begin ramping down after 2019, hitting 22 percent before expiring after 2021. But even assuming that credit is extended, SolarCity plant's output is likely to be highly cyclical. During recessions, consumers tend to postpone discretionary spending, including home improvements such as solar panel installations. Imposing the required penalty at a time when the company is faced with reduced revenues because of a recession may weaken the company's financial position to a significant degree, creating pressure on FSMC to renegotiate the agreement to reduce employment targets. Or, if the employment penalties are imposed, the company's long-term health may be weakened.

Similarly, since SolarCity operates in a competitive environment, it may find it to be difficult to maintain its market position over a full 10 years—a relatively long period, particularly for firms operating in environments where technology is rapidly evolving. For those reasons, economic development agencies typically offer smaller amounts of financial assistance to companies and impose contractual job requirements for shorter time periods—in many cases five years. Even with these shorter job commitments, contract enforcement policies often provide some leeway for adverse events affecting assisted companies.

It should be noted that SolarCity's operating position has not been robust. The company has lost more than $50 million in each of the last four years and, as of late June, was is in the process of awaiting a cash transfusion in the form of a proposed acquisition by Tesla Motors, another company founded by Elon Musk. While net losses are not uncommon in emerging technology companies bringing new products to market, the nature of these ventures is inherently riskier than that of more established operations.

The contract also contains provisions providing for recapture if the company totally ceases operations, as in the event of bankruptcy. But if that occurs, Fort Schuyler will be one among a large group of creditors, none of whom is likely to be made whole.

Proponents of the approach used to finance SolarCity might argue that state ownership of the facility provides a significant advantage to state taxpayers. But in fact, public financing and ownership of the entire facility create a significant liability for the Fort Schuyler Management Corporation and potentially to New York taxpayers.

Assume, for example, SolarCity meets all of its commitments, occupying and operating the new plant for 10 years—but, in year 11, the company decides it would be more profitable to make the solar panels in China. Having met its commitment to New York, the company can walk away from the facility, having risked no capital of its own to build and equip it. Because SolarCity has no capital investment at stake, leaving it would not affect the company's balance sheet in a negative way. Nor would it face the task of disposing of the property, or of paying the cost of remediating any new environmental impacts.

Under this scenario, Fort Schuyler would be stuck with a facility that was designed and equipped for a specific purpose, for which it would be unlikely to find a tenant. Like the many abandoned industrial sites in Western New York, it would require demolition and potentially an environmental cleanup, the cost of which could be borne by New York taxpayers.

Changing and Inflated Job Commitments

The language of the MOA makes clear that 2,000 of the required jobs in the first five years are not manufacturing related, but are instead in part "to support downstream solar panel sales and installation activities within New York State." In other words, SolarCity can count these salespeople and solar panel installers towards its promise to locate 3,400 jobs in New York within five years of completing the new factory. But salespeople and solar panel installers are not moveable employees—they must be located near the markets that they serve. If SolarCity built the same plant in Pennsylvania, it wouldn't employ fewer installers or salespeople in New York.

Similarly, the agreement with SolarCity specifies that the company must commit to employ 5,000 people total in New York state by the 10th anniversary of the factory completion date. But, in addition to the sales and installation support jobs that are included in the first-five year requirements, the agreement allows support jobs at SolarCity *contractors and suppliers* to be counted toward meeting the contract requirements (Section 4.4 (c) of the Agreement).[9] And the agreement makes the SUNY Research Foundation along with SolarCity responsible for attracting and retaining the jobs. As a result, many of the 5,000 jobs that SolarCity commits to at the end of 10 years may neither be at the facility that New York State ultimately is paying for, or at the company that it is assisting.

There are justifications for states to offer economic incentives to companies to encourage them to locate employees in a state that they might not otherwise choose, but there is no real justification for giving incentive dollars to companies for employees whose locations depend on where their customers live. Nor should incentive deals count employment gains at companies not contracted by a state-related entity to create or retain jobs.

But given the shrinking job numbers at the solar panel facility, perhaps it is not surprising that SolarCity and CNSE/FSMC were anxious to find ways to make the impact of the project appear to be larger, including jobs that would not necessarily be located in New York state, and jobs at other companies in New York that contract with and supply the company.

What is the Real Value of the Project and Who Will Enforce Employment Requirements?

One of the more curious aspects of the SolarCity project and others managed by FSMC, including a light-emitting diode manufacturing facility in the Utica area, is the funding mechanism and the assignment of compliance responsibilities.

Empire State Development's board package for April 21, 2016[10] for SolarCity includes a cost-benefit analysis for the project. ESD's analyses are rigorous, and are based on a widely used economic model. The published result was surprising: an economic return of 54 cents for each dollar invested in the project. In other words, for every two dollars invested in the project, the state is expected to lose one dollar. There is an explanation for this, however, because the analysis published by ESD includes only the impact of construction-related activity, not the ongoing employment at the facility.

It appears that ESD's analysis did not include the impact of ongoing employment because ESD's contractual relationship is with Fort Schuyler Management Corporation, not SolarCity. Since ESD has no relationship with SolarCity, it is not a party to job commitments or enforcement of them.

To date, FSMC has published[11] few relevant documents on its website. Since FSMC is a private, non-profit corporation, it initially claimed not to be subject to the public meetings and freedom of information requirements that state entities must meet.[12] FSMC does not publish cost-benefit analyses of its projects, so we have no idea if the project will generate a positive economic return to the state if it is executed as the contracts specify over 10 years.

But, it turns out that the Memorandum of Agreement on Fort Schuyler's website provides that *"Once the process is complete, ESDC's role evolves into acting as compliance agent on behalf of the State of New York, with all expenditures being submitted as invoices to ESDC…. Furthermore, ESDC requires quarterly or yearly reports on employment and investment targets as outlined in the GDA, and reserves the right to withhold funding if targets are not met on a pre-determined schedule."*

So ESD *is* responsible for contract compliance between CNSE/FSMC and SolarCity, even though ESD *not* a signatory to the Agreement. This is necessary because, as noted, FSMC is a separate, private entity that owns the facility and equipment that will be leased to SolarCity. Though the contractual jobs commitment is between Fort Schuyler and SolarCity, FSMC would have a perceived conflict of interest if enforcing the contract's job-creation provisions affected the company's ability to meet other contractual commitments with Fort Schuyler.

ESD's board ultimately is providing state funding for the plant. The directors' materials for the SolarCity project, dated April 21, 2016, include this statement: *"Although there is no job creation or retention requirement for this project, this effort is expected to create more than 5,000 jobs …"*.[13] In a separate reference to the project, page 10 of the same ESD board materials states: *"There is no recapture based on the created jobs."* Thus, at this point, ESD's board actions do not reflect the terms of the agreement between SolarCity and CNSE/FSMC.

The fact that a state-related entity owns SolarCity's manufacturing facility and its equipment complicates the enforcement of job requirements. The language contained in ESD's latest board action suggests that unresolved issues exist regarding the means by which job-related contract enforcement will be implemented.

In the same regard, the contract between Fort Schuyler and SolarCity does not make clear which entity, the public Empire State Development Corp. or the private non-profit FSMC would receive and retain any repayments made in the event of the failure of SolarCity to meet contractual requirements. Repayment provisions in earlier contracts by Empire State Development, such as that with AMD/GlobalFoundries, provided that repaid money would be returned to a state entity.

Undiversified Risk for Western NY and New York Taxpayers

The commitment of three-quarters of a billion dollars of state money to a factory and equipment for SolarCity, and an additional $200 million for cleanup of the former steel factory site on which it is located, is being done in pursuit of a worthy goal. The Western New York economy, and that of Buffalo, in particular, continues to be among the weakest in New York state. For that reason, the decision to put a particular focus on the area's needs is sensible.

But, the approach taken raises risks and questions in several ways:

- First, by committing a huge portion of "the Buffalo Billion" to one project, there is a great risk that most of the dollars available to help the region's economy will go to waste.
- Second, by choosing to build and equip the SolarCity facility

without cost to the company, New York and SUNY/CNSE fail to leverage any private sector capital investment in the building and its equipment. In effect, since Fort Schuyler owns the means of production managed by SolarCity, this is a form of socialism for the benefit of a particular company.

- Third, because the company has not invested its own capital in the facility, it has less reason to remain in Buffalo after the lease period ends than if it had invested its own money.
- Fourth, because Fort Schuyler owns the building and equipment, this state-related entity has assumed the liability that will result from its ownership if SolarCity fails or leaves after the lease term.
- Fifth, because the agreement between SolarCity and CNSE/FSMC inflates the company's job commitment with local sales and installation jobs, and jobs that are not at SolarCity, the project job impact is overstated.
- Finally, the relationship between CNSE/FSMC and Empire State Development leaves a number of open questions around the job requirements associated with the project and the responsibility for ensuring that job creation promises will be met.

Every time government assists a business, by providing a financial incentive, it assumes risks. Companies operate in a competitive market in which the demand for their products or services may decrease or disappear. This can be the result of a variety of factors ranging from poor management, to changes in consumer tastes, to the development of newer technologies that obsolete existing products. The locations of markets may shift, or the cost of production in a particular location may become increasingly uncompetitive because of factors like labor and materials costs in other locations, exchange rates, or the cost of shipping. Finally, assisted companies may game the state, by asserting the need for incentives to retain or create jobs within New York's borders, or by claiming that they will hire or retain more employees than they actually intend to.

Because the SolarCity project is being carried out by a private non-profit corporation, accountability safeguards used by public agencies have not been implemented. While state entities like Empire State Development provide public records of decision processes, and full information about project benefits and costs, this information has not been available until recently for SolarCity and other FSMC-managed developments, and even now does not provide project benefit/cost information. This is true, despite the fact that the SUNY related non-profits are owned and directed by boards of directors whose members are largely representatives of New York State agencies.

Economic development carries inherent risks. Decision makers must evaluate them when deciding how many public dollars, if any, to commit to a project. And, they must consider, when helping a company make a large capital investment, how much risk they are willing to assign to taxpayers, and how much can be avoided by structuring assistance packages and compliance requirements. In this case, the public has little information about how decision makers evaluated risks and benefits, and why a SUNY related entity (FSMC) chose to assume so much of the cost and risk associated with the development of the solar panel manufacturing facility for SolarCity.

All of this suggests some recommendations:

1. Despite their "private" status, FSMC and other non-profits operated by SUNY should be subject to the same transparency requirements as public entities. They should publish meeting proceedings and board materials on their websites, and they publicly disclose all available information about benefits and costs, and about criteria used in making project decisions.
2. The decision of FSMC to keep ownership of manufacturing facilities and equipment should be reconsidered, because public ownership creates a significant liability for FMSC and New York State in the event that the company fails or decides to terminate the lease at the end of its term.
3. To ensure a reasonable return for taxpayer-funded assistance, and to maximize company stakes in assisted projects, public investments should seek to leverage private capital investment in plant and equipment, not replace it. Companies that receive public assistance should be required to make a significant capital contribution to the cost of facilities and equipment.
4. Job commitment requirements should be constructed to provide real benefits to New York state. Companies should not include local sales and installation forces in commitment numbers, and should not include employment at companies that are not part of the assistance agreement with the state related entity.

John Bacheller served as Deputy Commissioner for Policy and Research at the New York State Department of Economic Development, and as Senior Vice President at Empire State Development Corporation from 1995 - 2007. Dr. Bacheller's responsibilities included the development of policy positions on economic issues, and the supervision of research by the Division of Policy and Research of the Department. Prior to that, as principal program associate for the State Senate Majority, Dr. Bacheller authored significant portions of the state's laws in the area of economic development, including the Omnibus Economic Development Act of 1990, and legislation reforming Industrial Development Agency activities.

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[1] Empire State Development is New York's lead economic development agency. The author was a senior executive there between 1995 and 2007.

[2] A portion of the state's indirect subsidy (for GlobalFoundries) took the form of promised corporate tax breaks, whose value has likely been diminished by the Legislature's 2014 vote to phase out all corporate taxation of manufacturing companies.

[3] http://www.globalfoundries.com/newsroom/press-releases/2012-press-releases/2014/03/01/globalfoundries-extending-fab-8-to-meet-strong-customer-demand

[4] Other projects managed by FSMC are financed in much the same way. They include a hub for nanotechnology related film and television in Syracuse, and a computer chip commercialization center in the Utica area.

[5] http://static1.squarespace.com/static/547d03b1e4b04c7d4872dd01/t/56d73336ab48def0679be13a/1456943926737/Riverbend+-+Ninth+Amendment+signed.pdf

[6] In these quotations, "SolarCity" has been substituted for the name of the predecessor company, "Silevo," which had the original agreement with CNSE/FSMC.

[7] The agreement with SolarCity provides that the property be included in a Start Up zone, eligible for generous tax incentives. See Section 4.8 of Amended and Restated Agreement…

[8] http://static1.squarespace.com/static/547d03b1e4b04c7d4872dd01/t/56d73267ab48def0679bd8e5/1456943719940/Silevo+Amended+Restated+Agreement+-+fully+executed+%289-4-14%29.pdf

[9] http://static1.squarespace.com/static/547d03b1e4b04c7d4872dd01/t/56d73267ab48def0679bd8e5/1456943719940/Silevo+Amended+Restated+Agreement+-+fully+executed+%289-4-14%29.pdf Note that the fact that some of the jobs counted towards the job creation requirement are not at entities that are part of the agreement may make it difficult get data from them to verify claims about employment levels at their locations.

[10] Available on Empire State Development's website at: http://esd.ny.gov/PublicMeetings_Notices/2016/04212016_ESD_BM_materials.pdf (pp. 60-96)

[11] Note that after public pressure, in a press release dated June 22, "Fort Schuyler Management Corporation Board of Directors Unanimously Votes to Open Meetings to Public" FSMC agreed to open its meetings to the public, agreed that it was subject to FOIL, and agreed to publish documents online.

[12] To the contrary, Robert Freeman, the head of New York's Committee on Open Government has opined that FSMC is subject to the State's Freedom of Information Law.

[13] http://esd.ny.gov/PublicMeetings_Notices/2016/04212016_ESD_BM_materials.pdf (pp. 67-69)