

## **How to create green jobs? Lessons from U.S. state and local economic development job creation programs.**

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The landmark U.S. Inflation Reduction Act (IRA) is a major turning point in U.S. industrial policy, coupling a green energy transmission with claims of the creation of as many as 9 million new green jobs.<sup>1</sup> Unfortunately, many of the provisions of the IRA deviate from best practice that we have learned from decades of experience and research from state and local economic development. In this memo I identify eight different lessons from state and local economic development. This includes simple program design suggestions including identifying concrete and measurable goals as well as sunsets and evaluations of programs based on these goals. Other lessons include addressing potential goal conflict and unintended consequences of program designs including encouraging automation as well as triggering state and local incentive wars for new investments. The broadest lesson is that that programs aiming to create jobs are best designed as job creation programs, incentivizing direct job creation instead of capital investment and investing in worker skills as opposed as subsidizing employer’s capital investment.

*A very quick primer on state and local economic development in the United States*

Economic Development Programs vary across states and local governments in terms of structure and implementation. Many programs, however, aim to drive job creation or expand the tax base. Increasingly, social impact is an element of these programs, with goals that aim to address affordable housing, food security, and climate-resilience and renewable energy

State and local governments in the United States spend between \$45 billion to \$90 billion per year on economic development incentive programs (Parilla and Liu 2018). This wide range is due to the lack of uniform data reporting, the shielding of some programs from public records requests, and the use of tax abatements that historically haven’t been reported on state, county and city annual financial reports. These estimates don’t include the recent \$80 billion in industrial policy from the Federal Government (Muro et al 2022).

The types and structure of these programs varies dramatically across states. One review of state manufacturing incentive programs found that the majority of economic development programs have the goal of either creating jobs or expanding the tax base. (Danzman et al 2016).

Unfortunately, many programs have a mismatch between state goals and the incentive policies. For example, some job creation programs at the state level provide property tax abatements to firms as a mechanism for job creation. Ironically, these programs, by lowering the cost of capital, can lead to a substitution of capital for labor, further encouraging automation. The overall impact on jobs and earnings is complex and depends on important industry level factors.<sup>2</sup> To use an example of an EV

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<sup>1</sup> <https://www.bluegreenalliance.org/site/9-million-good-jobs-from-climate-action-the-inflation-reduction-act/>

<sup>2</sup> See Garrett et al 2020 for a recent study.

production facility, economic development incentives that provide tax relief for capital and require higher labor standards can encourage a shift from capital to labor. These tax abatements on capital are sometimes referred to as “robot tax abatements” can have the unintended impact of reducing employment.

This memo summarizes some of these findings with specific reference to the Inflation Reduction Act and green industrial policy.

### 1. *Programs Require Clear and Measurable Goals*

An obvious starting point for any program is clear goals that allow for a program design and implementation to achieve these goals and for future evaluations to assess the quality of the program in achieving these goals. Unfortunately, many programs either have no clear goals or they include a long list of sometimes conflicting goals. Recent audits of existing programs, such as Kansas’s Legislative Audit of their Angel Investor Incentive program, often make recommendation to goals for the program to improve efficiency and evaluation.<sup>3</sup>

This point on goals is important for legislation such as the IRA. Green industrial policy often attempts to simultaneously affect environmental outcomes and generate jobs. These goals can be inconsistent with each other or at the very least very difficult to achieve if programs aren’t well designed.

For example, in utility scale wind and solar, many proposed projects across the country only promise a very small number of full-time employees. For example, the two most recent solar and wind applications for state incentives in Texas, Skull Creek Solar developed by hep Creek Clean Energy<sup>4</sup> and Siete Wind<sup>5</sup> developed by Apex Clean Energy propose to create one and six jobs respectively. Oklahoma’s 2020 evaluation of the state’s Tax Credit for Electricity Generation by Zero Emission Facilities found that the wind industry only employed 178 full time workers across the state.<sup>6</sup> Extremely capital-intensive industries such as utility scale wind and solar are poor industries to target for job creation.

The job creation associated with utility scale energy renewable energy projects is largely confined to construction, which is a transit industry with limited localized benefits once construction is complete. Programs that focus on the labor standards for the 1-2 full time employees of the company at the location miss the more important point on the labor standards for the construction industry, as well the environmental impact of construction.

For more labor-intensive operations, such as electric vehicle production, there are greater benefits to focusing on the direct employment by the company, but note that these companies also have extensive supply chains with more indirect workers than direct employees.

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<sup>3</sup> <https://www.kslpa.org/audit-report-library/angel-investor-tax-credit-program/>

<sup>4</sup> <https://assets.comptroller.texas.gov/ch313/1963/1963-cayuga-skull-app.pdf>

<sup>5</sup> <https://assets.comptroller.texas.gov/ch313/2074/2074-webb-siete-app.pdf>

<sup>6</sup> [https://iec.ok.gov/sites/g/files/gmc216/f/ZeroEmissionsFinal20201102\\_0.pdf](https://iec.ok.gov/sites/g/files/gmc216/f/ZeroEmissionsFinal20201102_0.pdf)

Clearly articulating if the primary goal of an economic development program is job creation, or the attraction of capital investment in an green industry, can help address some of these goal conflicts. Programs with a goal of job creation are best structured as a per job subsidy as opposed to capital investment incentives. Programs attempting to help with the deployment of new investment for consumption should be designed to increase marginal investment in that policy areas, often discriminating between firms that would have invested without subsidies and those where subsidies are crucial for their investment.

*2. Identify the barriers to job creation and build programs to address these barriers*

A second, and related step to program design is to identify the barriers to economic development and design programs to address these barriers. Identifying barriers can be addressed through reviews of academic and industry studies as well as firm level surveys<sup>7</sup> of barriers. For example, a recent studies have identified the most important barriers to private investment in renewable energy (Polzin et al 2019, Qadir et al 2021).

In the context of job creation, providing a per job incentive grant can lead to increases in employment for some firms, but other firms may cite skills gaps in the community as a barrier to economic development. Workforce development programs can be especially effective in helping address these skill gaps, and they don't share some of the broad concerns with taxpayers subsidizing business.

It is obvious but often unsaid that without systematic research on the barriers to the creation of green jobs by industry it is impossible to design programs to address these barriers. Review of academic literature as well as business surveys are effective in identifying the key barriers, and evaluation of existing economic development programs are increasingly using surveys of program participants to examine the impact of policies on these barriers.<sup>8</sup>

*3. Upfront subsidies are more efficient than long tax abatements*

State and local governments often provide tax abatements for firms of 10 year or more. Literature on firm decision making suggests that firms heavily discount these incentives, sometimes with discount rates in excess of 10%. These long tax abatements are particularly inefficient for small businesses with limited capital and high levels of uncertainty for the future. A government's ability to borrow at low interest rates suggests that the optimal strategy for government providing financial support to firms that up front cash subsidies are more efficient. Bartik (2019, 54) estimates that converting 10 year tax abatements into up front subsidies "increases the job creation effects by 38%".

These upfront subsidies are not preferable to most politicians given the high sticker prices and the need to fund these programs. The politics of building these up front subsidies aren't insurmountable, where the U.S. Chips Act includes subsidies for semiconductor programs. These up front subsidies, especially if targeted to smaller businesses, are much more likely to impact firm decisions.

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<sup>7</sup> <https://economicdevelopment.extension.wisc.edu/articles/business-owners-survey/>

#### 4. *Targeting and the “But, for” problem of economic development incentives.*

A classic work, based on interviews with economic developers has a title, “Shoot anything that flies; claim anything that falls” is a good summary of the academic literature on the use of economic development incentives (Rubin 1988). Many investments claimed as success are projects that would have invested even absent incentives. This is what we call the “But, for” question in economic development. But for the incentive, would the company have invested?

The most influential study on the topic is Tim Bartik’s meta-analysis of 30 peer reviewed studies. Bartik finds that incentives were pivotal in firm decisions in only between 2%-25% of location decision. My own work on tax incentives in Texas finds that over 85% of companies would have invested without local tax incentives, including numerous energy companies (Jensen 2018). Many of these companies admitted on their application that they were only considering Texas and in some cases had already broken ground or completed the building of their facility.

There are two important implications of these percentages.

First, quality evaluations of programs are starting to use these percentages. Evaluations of programs such as those found in the IRA need to account for the large number of projects that would have occurred absent the IRA to calculate the IRA’s benefits.

Second, program design can help increase these but for percentages, saving taxpayer money and increasing the likelihood that the programs will meet their goals. This targeting can be done with vetting of projects, program design for the most mobile of industries, focusing incentives on smaller businesses that are more sensitive to incentives, or other policy reforms.

#### 5. *Beware of complex programs that encourage leakage and rent-seeking*

Complex programs can limit participation by smaller firms and generate rents for non-core activities, such as consultants or financial intermediaries. The Production Tax Credit (PTC) has historically provided tax credits to wind developers that can offset tax liabilities or be carrier forward. But for renewable energy companies with limited tax liabilities, these companies needed to “monetize” these tax benefits with complex tax equity financing arrangements. According to a 2020 Congressional Research Service evaluation of the program, this limited the amount of dollars being directed to core renewable energy arrangements.

Another example is the various interest groups lobbying for tax incentives at the state and local level to be made “transferable”. This technical sounding design choice has major implications for the efficiency and rent-seeking of programs. Tax incentives are often allocated to companies that have limited tax liability. State and local governments can make these incentives “refundable” allowing companies to trade these tax credits in for grants from the treasury. An alternative is to allow firms to “transfer” these incentives to other companies, essentially selling their tax credits to companies with tax liability. But this transferability may require brokers, lawyers, and consultants to help create a market for these credits. Recipients of tax credits then use some of the value as they hire these specialists and sell these tax credits lower than face value. Iowa’s 2019 evaluation of the state’s Wind

Energy Production Tax Credit found that virtually all of the tax credits generated by this program were transferred.<sup>9</sup>

Financial firms such as Advantage Capital, Enhanced Capital and Stonehenge Capital have actively lobbied for the creation of programs at the state level that include transferability of these credits.<sup>10</sup> The Inflation Reduction Act's use of transferable tax credit, as opposed to refundable tax credits, limits the effectiveness of these tax dollars and generates rent seeking activities.

#### *6. Build programs that include evaluations and sunsets*

Economic development programs have come under increasing scrutiny as a number of states have begun the formal process of program evaluation and auditing. According to Danzman et al (2016), only 5.7% of manufacturing programs had impact assessment criteria or public evaluations. The Pew Charitable Trusts has been active in helping states enact legislation mandating evaluations of programs and documented numerous evaluations have led to substantive changes (Goodman and Boender 2021). The National Conference of State Legislatures maintains a public database of state economic development evaluations.<sup>11</sup>

These state evaluations, as well as peer reviewed research, informs best practices of economic development. Research suggests the worst performing programs lack clear goals and provide incentives for large businesses through long tax abatements. Conversely, research suggests that programs that provide business services or workforce development have a much higher return. (Bartik 2019).

Best practices in economic development is to encouraging learning and reform by design. Economic development programs can be built with sunsets as well as economic development evaluations by agencies. At the state level many programs have a 10 year sunset date with an evaluation by the state auditor or other government agencies that provides an evaluation of performance and recommendations for reforms. I am unaware of any required evaluations of IRA programs and numerous programs include no sunset dates.

#### *7. Don't miss opportunities for coupling incentives with other reforms.*

Major new programs are opportunities for learning and addressing societal problems with economic development policy. State programs for economic development are increasingly attempting to address multiple goals, such as requiring high quality labor environmental and building standards. Local incentives are often coupled with community benefit agreements.

One underutilized dimension is the encouraging of economic activity in areas with greater access to public transportation. Firms building EV production facilities with access to public transit for their workers could be privileged over firms that essentially require all workers to drive to work.

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<sup>9</sup><https://documents.ncsl.org/wwwncsl/Fiscal/evaluationDB/WindEnergyProductionTaxCreditandRenewableEnergyTaxCreditTaxCreditsProgramEvaluationStudy.pdf>

<sup>10</sup> <https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2017/04/03/how-savvy-financiers-pitch-complex-investment-programs>

<sup>11</sup> <https://www.ncsl.org/fiscal/state-tax-incentive-evaluations-database>

National green industrial policy has multiple opportunities to shape economic activity and achieve multiple goals.

8. *Incentives at one level of government affect incentives at other levels of government*

The increased economic activity generated by programs such as the Inflation Reduction Act, if not well designed, can lead to an explosion in state and local economic development incentives that are highly criticized by academics and state economic development agencies. Companies generally seek incentives from multiple levels of government. Investments in energy or manufacturing often require city, county, and state economic development incentives as well as other specialized incentives such as sales tax rebates. These incentives can also cause subsidy wars across states as EV production plants hope offers from multiple competing states.

At the very least, Federal government agencies should be neutral on the use of the state and local incentives. The US Chips Act *requires* companies to forgo state and local incentives to unlock Federal dollars. These regulations on this act aren't finalized, but economic development consultants have told school districts that they believe this is a type of matching fund and the more state and local incentives they can achieve, the greater their Federal incentives.<sup>12</sup>

The Federal government could do even more to help empowers state and local governments. Numerous state legislators have proposed “state compacts” limiting the ability of companies to threaten out of state relocations to obtain additional incentives.<sup>13</sup> The Federal government could require companies to select a single location for their investment for their application for Federal incentives, and formally ban the obtaining multiple state or local incentive offers.

An even stronger policy design would be to increase the generosity of Federal incentives but require companies receiving IRA funding to not receive any state or local incentives. This would not only protect state and local governments, but it would also encourage the selection of the most productive investment locations, as opposed to locations willing to give the most in incentives.

Other policy reforms are possible, but the big picture is that the increase in Federal industrial policy will lead to a great use of state and local incentives. Programs such as the Inflation Reduction Act can lead to additional burdens on state and local taxpayers, and in many cases tax abatements that directly impact local schools.

*Concluding Thoughts*

The increasing use of Federal policy for economic development as well as environmental policy is both an exciting and challenging time. Fortunately, we had decades of experience in the use of economic development policy as the state and local level. These lessons are often portable to other

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<sup>12</sup> For example, Dutch semiconductor manufacturer NXP presented to the Austin Independent School District their require for local tax abatements, listing the US Chips Act and the need for state and local incentive support to access Federal incentive dollars.

<sup>13</sup> <https://www.economicliberties.us/our-work/what-you-need-to-know-about-the-interstate-compact-against-corporate-tax-giveaways/>

country contexts allowing us to learn from U.S. state and local economic development policy on how to generate green jobs around the world.

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