An Analysis of US Industrial Policy and Supply Chains in Defense Contracting and Energy Systems

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EXECUTIVE SUMMARY

I Introduction

In Fall 2020, the congressional delegations that represent Schenectady (NY) and Lynn (MA) wrote to General Electric to express their alarm at GE’s ongoing disinvestment in both locations. They urged GE to engage in a joint improvement study with labor and community organizations to secure the viability of GE’s plants in the company’s founding cities. GE declined to participate.

The Cornell University School of Industrial and Labor Relations and the UMass Boston Labor Resource Center took up this appeal and assembled a team of experts to carry out this study without GE’s support. Our focus on the GE plants in Lynn and Schenectady revealed that the trajectory of these facilities is not unique. These plants serve as essential case studies for GE’s corporate strategy and US industrial policy in defense contracting and energy systems.

Our full report includes detailed studies of GE’s history, current practices, and future prospects in Lynn and Schenectady. At the national level, we investigate GE’s manufacturing strategies and plant closures across the US; the extensive government subsidies and contracts GE receives; and how GE executives and board members have extracted value from the company instead of re-investing in production and innovation. Finally, we analyze GE’s role in two issues of pressing concern to our President and Congress: 1) the inherent risks that globalized supply chains pose to our national security and defense industrial base; and 2) the need to grow our domestic renewable energy sector – from production through generation – to combat climate change.

General Electric has come under much criticism over the past decade, and our findings largely reflect the validity of these critiques. Our work shows that GE’s trajectory in Schenectady and Lynn, mirrored by plant closures and workforce reductions nationwide, is unsustainable. At the same time, we show how GE’s production and profits are shaped by federal contracts, subsidies, and the policies surrounding them. These piecemeal policies do not, at present, constitute a coherent industrial vision for the US, nor do they incentivize sustained investment in domestic manufacturing.

Despite these very real challenges, we believe the company, labor, and government can chart a better path, one that expands profitable production in Lynn and Schenectady and positions GE to lead the reshoring of manufacturing and the domestic production of renewable energy systems. To build back better in Lynn, Schenectady, and the US more broadly, we urge GE to modernize and re-invest in its historic manufacturing sites. We urge our elected leaders to strengthen existing provisions and programs and to embrace new strategies that will ensure work subsidized or contracted by the US government generates sustainable, robust investment in US manufacturing.

II Findings

1. GE’s approach in Schenectady and Lynn is hollowing out these plants and cities, which GE is doing in facilities and communities around the nation.

   - GE has outsourced, offset, and transferred products around the world and cut production personnel by 90% in Schenectady and Lynn since the 1980s.
• GE has not fully modernized these plants despite generous contracts and subsidies from every level of government and clear evidence that both sites retain skilled workforces and locational advantages for industrial production in the US.

• In 1989, GE employed 277,000 people in the US, 29% of whom worked under union contracts. By 2009, GE employed 134,000 people in the US, 15% of whom were unionized, and by 2019, GE employed only 70,000 people, 9.6% of whom were unionized.

• This is not a simple “rust-belt/sun-belt” or “blue-state/red-state” story: GE and its suppliers have recently closed plants in Virginia, Ohio, Georgia, Arkansas and South Dakota, and have transferred work away from sites in Kentucky and Kansas.

2. GE’s manufacturing strategy is not simply driven by costs. Rather, GE responds to international and domestic political pressure in locating new plants and jobs.

• GE’s manufacturing profits come from service and maintenance contracts, not initial sales of equipment (e.g. turbines, jet engines). GE moves work – domestically and globally – to generate the political capital it needs to secure such contracts.

• When GE purchased Alstom’s power business in 2015, the French government stepped in to preserve French jobs and plants. GE’s own evaluations showed its power business in Schenectady was far more efficient, but the company obliged. GE Renewable Energy launched with a federal grant in Schenectady in 2011; it is now headquartered in Paris.

• Last year, political pressure on the Tennessee Valley Authority (the nation’s only federally-owned power generation authority) kept GE from outsourcing turbine work from Schenectady to Poland, as GE had originally intended.

3. Building a sustainable future for GE in Schenectady and Lynn demands political action to ensure government contracts and subsidies generate domestic manufacturing jobs.

• Taxpayer dollars – in the form of government contracts and subsidies – have bankrolled GE’s transient approach to manufacturing. Profits from military aviation contracts fund GE’s outsourcing of parts in its commercial aviation business, while massive subsidies for wind energy have fueled GE’s global growth in renewables.

• Meanwhile, cities including Schenectady and Lynn have been left to bear the social and economic costs of disinvestment while GE’s ever-expanding supply chains generate inherent national security risks and contribute to climate change.

• We need new legislation, regulation, and executive action to re-shore supply lines and generate domestic investment in manufacturing, particularly of wind energy systems.

The workers and communities whose taxes bankroll GE deserve stable, sustainable investment from GE in return. Work can be brought back to the US if voters and political leaders condition new business for GE on the company’s commitment to build back better here. Under CEO Larry Culp, GE has recommitted to its “core four” industrial business. The question is not whether GE is still an industrial company. It is whether GE is still committed to industrial production at its plants in the US, and whether we have the political will to ensure that commitment.
III Recommendations

1. We urge GE to join in an independent study of its operations in Schenectady and Lynn.
   - Such a study would demonstrate the capacity of these plants to bring back work that is currently offset or outsourced and confirm the need, and potential, for investment.
   - Findings could be used to shape policy and presented at Congressional hearings.

2. We urge GE to fully re-invest Schenectady and Lynn as “brilliant” factories.
   - Since 2014, GE has celebrated the opening of “brilliant factories” around the world that combine “four pillars”: lean manufacturing, technological advances/automation, 3-D additive printing, and connectivity through digital threads.
   - In Lynn and Schenectady, GE reports that they are engaged in lean manufacturing, but without the other three pillars in place, this does not constitute substantive reinvestment.
   - GE tags its reports on brilliant factories with “Factory of the Future.” The company built an “Automated Factory of the Future” to much fanfare in Lynn in the early 1980s but closed it in 1992. GE should include Lynn and Schenectady in its new vision for the future.

3. We urge GE and Congress to invest in supplier parks in Schenectady and Lynn.
   - GE has long incentivized its suppliers’ choices of location, including urging US suppliers to move to Mexico after the passage of the North American Free Trade Agreement (NAFTA).
   - GE could build state-of-the-art manufacturing facilities for itself and turnkey facilities for its suppliers on the company’s Lynn and Schenectady properties. These could include additive manufacturing equipment, as the company is doing with the US Air Force in Oklahoma.

4. We urge Congress and the President to investigate whether products and parts GE makes overseas for US government contracts can be made at these plants.
   - In both the bipartisan infrastructure bill and new rule-making, the President and Congress are moving to strengthen existing provisions, including Buy American, Buy America, the Jones Act, and Title III of the Defense Production Act.
   - We urge lawmakers to expand and strengthen enforcement of measures that give preference to domestic suppliers of defense goods, and to increase domestic content requirements in all federal procurement, as well as in subsidies and tax waivers.
   - Congress is also moving to freeze and reduce the use of waivers for domestic production. Hearings on domestic manufacturing and these waivers, in particular, are warranted.

5. We urge Congress to enact new policy instruments to ensure that receipt of government contracts leads to re-investment in American manufacturing
   - Rather than simply urging companies like GE to build and buy American, Congress could require that a percentage of profit from government contracts be re-invested in US manufacturing, so as to ensure that GE’s historic domestic plants are as modern, productive and efficient as their newer overseas factories.
• Congress could consider the effort, led by Sen. Chris Coons of Delaware, to charter an Industrial Finance Corporation to support manufacturing growth domestically.

6. We urge Congress to ban stock buybacks and to allow workers to elect one-third of their companies’ boards of directors to end predatory value extraction at GE and beyond.

• From 2014-2016, GE generated a profit of $17.9 billion, but distributed $26.6 billion in dividends (148% of profit) and $27.5 billion in stock buybacks (another 153% of profit).

• From 2017-2019, GE incurred a total loss of $33.1 billion, yet distributed $13.8 billion in dividends and $3.8 billion in buybacks.

• Congress should pass the Reward Work Act, proposed by Sen. Tammy Baldwin (D-WI) in the Senate and Reps. Jesus “Chuy” Garcia (D-IL) and Ro Khanna (D-CA) in the House.

7. We urge Congress to link subsidies for developing renewable energy capacity to US manufacturing.

• Power purchase agreements, federal grants, tax credits, and subsidies that drive privately funded wind-energy projects should be tied to “local content requirements” (LCRs) and supply-chain standards in order to build a robust domestic wind energy sector.

• The Biden Administration has proposed $10 billion for new IRC Section 48C tax credits to fund advanced energy manufacturing projects in its FY 2022 Budget Proposals. Expanding this program, with updated domestic content requirements, is an excellent place to start.

• It is no accident that the Tennessee Valley Authority – the only federally owned power authority – was able to convince GE to manufacture turbines for TVA plants domestically. To replicate this success, Congress and the President should expand their oversight of private power providers so that elected representatives can demand domestic production.

8. We urge Congress to enact new policy instruments to build a domestic wind energy sector from production through installation and generation.

• Congress could explore use of the existing 200 mile coastal conservation zone – whose origins demonstrate that this zone was meant to be a space for the protection of national security and economic interest – to create a federal permitting process, with domestic content and job requirements, for the sourcing and installation of offshore wind farms.

Some of our recommendations concern existing legislation or proposals, while others seek to re-imagine US industrial policy on a broad scale. As detailed in our full report, the scale of the challenges facing GE plants and their communities across the nation is vast. Nonetheless, with coordinated action from the company, labor, community organizations, and government, we believe GE can serve as a model for the rebirth of a domestic manufacturing sector that secures the health of our communities, our national security, and the future of our environment.
List of Contributors

The research and analysis presented in this report represent the work of the experts listed below. These findings should not be construed as the official positions of their respective institutions.

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