

Governments Can and Must Lead Climate Action via Public Investment

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If the composition of our atmosphere and our contribution to it are taken seriously, current worsening climate conditions call for an emergency response. Given the stakes involved and 20 years of little more than climate policy “talk” and hesitant action, the rate at which governments and societies act on this issue must quicken. As the 35,000 beached walrus that would be ordinarily hunting from ice floes have foreshadowed, we are endangering our common livelihood in continuing to destabilize the climate system.

While there are powerful vested interests who do not want climate action or want to delay this action to the last minute, climate campaigners and climate policy designers have paradoxically, though unwittingly, discouraged the most important actors in this drama from taking action in the first place. Traditional climate policy recommendations and policy frameworks have tended to edit out or downplay the roles of political leaders and government as well as those of citizens’ groups pressing for change. These frameworks have emphasized that (a) an international “deal” or consensus is the optimum place for climate policy to start and that (b) the levying of an international, supranational tax or institution of a pollution permit system is the entry-point for climate policy and politics. What has thus emerged is a “collective action problem”, in which political leaders wait and say to each other “no, you first.” The policy emphasis on disincentives like pollution payments by households and businesses has unsurprisingly increased the political difficulty of climate action; to many people it looks like only “punishment” for their carbon sins. Or, viewed from another angle, the policy framework shoves the hard work of creating a net zero-carbon emissions society onto businesses and consumers, many of whom are already cash strapped.

While national governments and a binding international treaty would be progress, those caught in traditional climate policy thinking have been mistaken about the scope of actions available to national, regional, and local governments. In fact, they have the causality or sequence for effective climate action exactly reversed: it is via the adequate use of the institutional powers of government on all levels that climate policy efforts will be led. In fact, what progress there has been on climate goals has come largely from governments taking the lead in promoting clean energy and increasing energy efficiency. International deals are important and controlling carbon emissions caused by international trade is inevitable, but the impulse and implementation of actions to cut emissions must happen via, among others, spending decisions by governments themselves.

Public Sector and Private Sector

The reason that conventional – and to date marginally effective – climate policy has largely excluded positive action by government is because it is believed that once governments introduce an effective carbon-trading or tax regime, the private sector would lead the charge and transform on its own. While on the one hand this has seemed like a big compliment to the private sector, these policy ideas leave out of the picture a whole range of social functions and areas of life that are in the public domain even today. Despite the unfortunate political tendency to badmouth the role of government, policymakers and political leaders have irreplaceable roles, no matter how talented progressive or “green” businesses and householders are or can become on their own.

For one, despite the short-term thinking prevalent among political leaders, governmental institutions usually maintain planning horizons of decades. The role of these institutions is to look to the future in which climate change may have some of its worst effects. Second, the “common spaces” of our society are maintained and regulated by governments. Governments are responsible for public safety, for example, including building codes. Even if government leaders narrowly see themselves as facilitators of business growth and attracting new businesses away from other jurisdictions or states, only the most ideologically extreme politicians can ignore the complementary role of government action and responsibility.

Some advantages of 20 years of well-intentioned – if ill-designed – climate politics and 40 years of environmental and energy awareness have very much born fruit in the private sector. Anticipating the growth of markets for lower carbon products and services, businesses over the last couple decades have developed greener products and services that can be purchased and utilized by governments for the benefit of the public. Some leading businesses have in addition done sustainability work and carbon accounting within their own organizations. These can offer examples for governments to learn from or transpose, with the necessary modifications, into the public sector context.

Local, Regional, National & International

There is no single, undifferentiated “government” or public sector. On the contrary, there are many layers of government and public institutions. Each of these levels and institutions have different competencies and potentials when it comes to acting to protect the climate.

Local governments are often fiscally constrained by their tax base and/or tax-revenue sharing facilities set up with higher levels of government. Investments related to climate change need to be assigned to appropriate levels of government. Local government leaders do enjoy advantages like face-to-face relationships with many constituents and interest groups, enabling them to experiment or try out ideas with the people they represent quite directly. Local political leaders who want to lead on climate can start by attending local meetings of pressure groups and brainstorming about ways that they can get people in the community excited about climate action and transforming their

community as much as possible. Still, the communitarian ideal of some in the green movement is unrealistically narrow; a prosperous economy and a renewable energy powered society will not always be “local” in focus. People want goods from outside their “area.” To run an entire society on renewable energy will almost always require sharing power with other “areas.” Stepping up to the regional level makes sense.

Regional or, in the U.S., state governments have more fiscal powers but like local governments are constrained by current and future tax revenues in terms of their spending or by the support of the monetary sovereign (usually the national government and its central bank). Devolving spending to local levels is a sure-fire way of slowing down action in most cases. Still, regions share a common geography and can become leaders in certain sectors or areas where their economy or geography lends them advantages. Regional governments can also collect some of the expertise needed for complex projects in a more specialized bureaucracy than is available to local governments. As compared to national polities, the relative homogeneity of a region’s population and outlook can create a critical mass for ambitious action. Planning should not, however, get ahead of the ability to spend and realize projects. Regions need to create contingencies regarding climate plans even if the participation of the national government is irrelevant to realizing a given project.

Ultimately, national governments with their own sovereign fiat currencies such as the U.S., Japan, U.K., China, India, Australia, and Canada have the most room to realize ambitious national action plans with regard to climate. National governments with freely floating currencies can expand and contract public spending as needed by the real circumstances confronting their society. The limitation on their spending is not taxes collected (or to-be-collected), but the potential inflationary pressure of too much spending. This is, in terms of trade, the exchange rate of the currency in relationship to export and import partners. The flexibility in this relationship means that national governments do and must supply liquidity and financial assets to the private sector by spending money. Often, this spending will be more than the money “taxed out” of the economy. In the case of climate-protection related spending, national governments can undertake projects of almost any size within the limits both of the real capacity of the economy to execute them and, of course, the atmospheric burden of construction and manufacturing activity. Though a separate topic in itself, regulating businesses to decarbonize and produce low carbon goods is most efficiently realized on the national level, avoiding or superseding a patchwork of local regulations.

On the international level, governments must work together to minimize “leakage” of carbon emissions via imports and exports. A carbon price and carbon tariff system can be implemented once national economies have started to decarbonize. Contrary to conventional climate policy accounts, such price-setting is not the first or limiting step for climate action to occur. In some sense, such a price would eventually be set to disadvantage laggards in national, regional and local efforts to decarbonize via direct investment and goal-directed regulation of the private sector.

Where to Start?

There are, of course, many large-scale multi-dimensional and multi-lateral projects that will require extensive run-up and preparatory work. Such projects might additionally require rule-making or coordination from national, or even international bodies. However, there are many more initiatives that government leaders can undertake to show a clear commitment to climate protection. Being on a vastly smaller scale, these initiatives can be undertaken rapidly. Most of them offer an emissions-reduction benefit by themselves, with even greater benefits realized when working on concerts:

- 1) **Climate Investment Plan/Climate Action Plan:** Some jurisdictions may have a political “allergy” to planning, in which case, the list below can be treated as a menu of options. However, to direct investment optimally over a fifteen or twenty year period, it will help in most jurisdictions to have a public discussion of climate investment alternatives and create a Climate Investment Plan. Depending on the level of government in question, such a plan might contain contingencies regarding how funding is organized for specific investments. For monetary sovereigns (mostly national governments) funding would be contingent upon the limits of real physical resources nationally, existing output level of the economy relative to potential, and the relative political prioritization of climate investment over other spending priorities. For those levels of government dependent upon taxes, fees, and national governments to supply currency and/or supplementary funding, contingencies would need to be built into the Climate Investment Plan. Such a plan should, ideally, be the government investment component of an overall jurisdictional Climate Action Plan. Despite the desirability of such plans, the other investments (below) can and should be undertaken for a range of co-benefits independent of formal climate plans.
- 2) **Protected Bikeways “Everywhere”/Bikeways-Shared Streets Plan:** Urban and suburban street design in North America and those nations that have followed our poor example have encouraged the almost exclusive use of cars and trucks. Cars should continue to be an option, especially electric cars. We cannot, however, depend on the privately-owned internal-combustion vehicle fleets being replaced anytime soon by personally-owned electric vehicles, which in large numbers would still create congestion in urban areas and on high-volume roadways. Northern European cities like Copenhagen have made their public spaces more attractive and livable by building bicycle infrastructure that enables biking by “everyone” and improves pedestrian options. Electric motorized bicycles, as well as tricycles, will enable people of all ages to engage in human powered or low-energy forms of transportation on appropriate trips. The least expensive way forward in this area, by avoiding new roadwork, are traffic calming regulations called “shared” or “complete” streets, where a 12 mph (20kph) or 18 mph (30kph) speed limit enables pedestrians, bikers, and powered vehicles to mix. These street designs in or near commercial districts add value for local businesses. Bike-share

systems have been extremely successful when well-designed and with sufficient usage can be self-financing. With appropriate infrastructure, a modal share for bike trips of 20% is possible in all but the most sparsely populated areas. Within 10-15 years, bikes combined with public transit options could account for 40-60% of all trips. Such reductions mean major steps towards a net-zero emission society.

Additional benefits include:

- a. Reductions in emissions of smog-forming pollutants and particulates
- b. Increased physical fitness/decreased health expenses for all ages
- c. Reclaimed public space for socialization
- d. Increase market for local businesses/spontaneous stops and purchases

Range of investment (high-cost nations):

\$500,000 (change in municipal signage/enforcement) to \$500 billion
(400,000+ km network of protected bikeways)

- 3) **Frequent Electric Bus & Express Bus Networks/Electrified Rail:** While most public transit advocates favor electric rail public transit options like streetcars, light rail, subways, or electric commuter trains, their construction is quite expensive and takes a long time. Where such rail systems exist, they should be optimized, electrified, and utilized to their full extent. In many parts of the world without a well-developed passenger rail system, battery electric buses can now replace diesel buses, with or without quick charge facilities along the bus route. There are now electric city transit buses with 150-mile ranges on one charge and soon there will be long-distance coaches, sometimes used as express buses, with 270-mile ranges. All transit options can be outfitted with Wi-Fi, enabling Internet-connected work and play while traveling. In daily transit usage, electric buses can return the additional investment in them within 6-7 years, generating long-term savings for government agencies in maintenance and fuel costs. Future versions of such buses might include thin-film solar “skins” that enable the bus to generate up to 10% of its energy directly. Frequent bus networks that include all-night service and newer on-demand shuttle buses would support a commitment by government leaders to “car-optional” lifestyles in urban and suburban areas. Minimal investments for local municipalities include a local electric circulating bus to enable easier access to local business from transit and to relieve downtown/high street congestion.

Additional benefits include:

- a. Reduction/elimination of diesel exhaust from buses
- b. Reduced operational costs per vehicle mile
- c. Reduced energy price volatility vs. oil prices
- d. Encouragement of denser and transit-oriented development
- e. Interlocking with bike networks/support of bike usage
- f. Flexible deployment of public transit for lower density regions

Range of investment (high-cost nations)

\$400,000 (electric shuttle-bus as local circulator) to \$1.5 trillion (1 million high frequency buses with fare subsidies for 1 year – Transfer up to 30% of US passenger miles to electric public transit)

- 4) **Sourcing Energy From Renewable Sources:** Most of the energy in the economy of the future will be delivered as electricity, because electrical end-use devices do not emit greenhouse gases at the point of use. Additionally, our strongest emission-free energy sources, particularly wind and solar energy, are easily converted to electricity by existing technologies at an affordable price. Governments can now invest in various forms of renewable energy for their own operations as well as, more ambitiously, create, via investment and regulation, the preconditions for a largely or completely clean energy supply for their constituents. Electric utility providers alone do not have the resources or the mandate to convert their substantial infrastructure to clean sources in time to stabilize our climate. Onsite self-generation with solar or wind, aided by financial incentives is one option, as is simply buying green power certificates or utilizing a green-power purchase option to invest indirectly in green energy. On a somewhat larger scale, long-term power purchase agreements can be used to control electricity costs for government and public agency operations (such as public transit); such agreements enable renewable energy project developers to build the generation facilities required. Still more consequential is to transform utility regulations to enable households, businesses and merchant generators to recover costs of generator installation plus a reasonable profit via performance-based incentive rates for renewable power generated – so-called “feed-in tariffs”. Public planning for and investment in a wide-area renewable energy transmission grid to enable replacement of fossil generation by renewable energy can, on a regional or national scale, supplement such wholesale rate structures.

Additional benefits include:

- a. Reduced emissions of non-greenhouse pollutants from power plants improving regional health
- b. Stabilized energy prices

Range of investment (high-cost nations)

\$1.5 million (500 kW solar array for municipal use) to \$4 trillion (10-year expenditure for building renewable energy supergrid across continental North America)

5) Passive House/Ultra-High Performance Buildings: With modest upgrades using existing technologies and in-design specification, new and retrofitted buildings can use 80-90% less energy in terms of heating and cooling. Some government agencies have been attracted to the “net-zero” building standard but paradoxically this standard means that buildings can become generally less efficient in their use of land and heating/cooling energy in order to accommodate more solar panels per unit volume. Buildings built to the near-zero energy Passive House standard or similar (for instance the Swiss Minergie-P) can be built in more efficient shapes, have superior indoor air quality and can have superior durability due to better moisture control techniques and air-tightness. Regional and local governments who must reckon with utility bills for decades will easily recoup the perhaps 5-10% additional cost of the building. Costs will eventually equalize as designers familiarize themselves with passive house design and construction techniques. Governments can follow the lead of some European cities and regions and mandate that all public buildings be built to the Passive House standard of air-tightness and energy use. To spur market transformation, incentives such as property tax breaks can be offered for first movers. Ultra-high performance building task forces can be convened to educate project teams on standards and techniques. Building codes can be changed to enable accelerated approvals.

Additional benefits include:

- e. Reduced emissions of non-greenhouse pollutants from power plants improving health
- f. Improved indoor air quality
- g. Lower energy bills
- h. Reduced energy demand at winter and summer peaks
- i. Quieter building interior
- j. More durable building assemblies

Range of investment (high-cost nations)

\$2 million (additional cost for large municipal building) to multi-trillion USD (20-year expenditure for retrofitting/new construction of U.S. government buildings to passive house standard)