

SUSTAINABILITY

# CLIMATE CHANGE MITIGATION POST THE PANDEMIC

REBOOTING TOWARDS A FOSSIL FREE  
ECONOMY



Svenne Junker



Lars-Gunnar Mattsson

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## COVID-19 as means for reaching the 2015 Paris Agreement

The long-term challenge about how to deal with climate change came into heightened focus in January 2020, as the Swedish government's Climate Action Plan was critically evaluated by the Climate Policy Council. But then the COVID-19 pandemic unexpectedly struck. With great speed, measures to constrain the spread of infection have in a very short time drastically reduced economic activity in Sweden and around the globe but also showed that when facing a severe crisis, government can abolish traditional policy activities divided between different and sometimes competing policy areas. COVID-19 policy activities cross such traditional boundaries and are characterized by a more comprehensive approach and willingness to abandon principles for economic governance and for state intervention in markets.

How has the ability and willingness by government and business to reboot planned climate mitigating efforts changed in the wake of COVID-19? Climate change is a more drawn out crisis than the pandemic, but with arguably more damaging social and economic effects.

Our point is that extended and deep interaction and collaboration between government and business, between the State and the Market, are necessary to handle "wicked problems" like climate change and pandemics, and will affect market processes. Policy practice affects market practice and interlinked change of both practices is crucial to develop fossil-free production and fossil-free consumption/use.

Links between practices often entail unexpected pathways. Schumpeter's concept 'creative destruction' denotes a process which disrupts the foundations of a system in the building of something new, stronger and, perhaps, more sustainable. With this in mind, we claim it is crucial to turn COVID-19 into a means for reaching the Paris 2015 climate objectives.

## Innovations for fossil-free cement and development of a circular economy

consumption several innovations of a technical and economic nature driven by business firms in markets as well as innovations of a public policy nature driven by government and government agencies are required and dependent on each other.

One of the industrial activities causing most fossil emissions is the production of cement (and concrete) used for construction of buildings and infrastructure. More than half of the emissions come from heating limestone when processing cement and the rest comes from fuels used in the production. A number of technical innovations are currently being developed in Sweden; these, however, depend on technical and economic innovations in other industries and markets and on policy innovations by government. To illustrate this: The building industry emissions principally relate to material used in construction, of which cement and steel are most important, and energy spending in construction and heating of buildings. How can adopting a circular economy perspective for construction and use of buildings promote innovation of fossil-free cement? What does that imply for exchange in markets between suppliers and buyers and what is the role of policy innovations aiming to influence how these market exchanges are performed?

## Fossil Free Sweden – Assembling interests into a common approach

A government initiated committee FFS (Fossil Free Sweden) has engaged some 20 industries/sectors to develop roadmaps towards reaching the national emission goals. Each road map indicates how the goals could be met by on-going and potential technical and economic innovations driven by business actors in the related markets, conditioned by government policy innovations.

The *Cement* industry roadmap mainly refers to technologies to store carbon dioxide (CCU and CCS) and to recycle material. Innovations to develop and operate CCU/CCS processes will increase the price substantially, but computed as a fraction of the total cost for a building it will be a quite marginal increase (0.5-1 %). Suggested policy innovations in the roadmap refer to climate requirements in public procurement and rules governing use of recycled material.

The Cement roadmap also relates to the *Construction* (buildings and infrastructure) roadmap. Innovations cover the extended value chain from extraction of raw material to the use of the building and the re-use of material. A life cycle perspective is required for planning, design, construction and utilization of buildings. Technical innovations thus need to be supported by economic innovations: transition from linear to circular business models aided by the availability and use of data on climate effects for all transactions in the extended value chain. Construction roadmap innovations are interdependent with innovations described in several other roadmaps. *Forestry* innovations include use of biomass for bioenergy and of wood for the construction of apartment buildings; *Steel* innovations include major steel production innovations and recycling of steel; and *Digital consultants* include digitization support for technical and economic innovations such as assembling and using measures for CO<sub>2</sub> emissions.

Each of the interdependent roadmap innovations present a broad list of required/suggested government policy innovations. *Construction* for instance wants predictable, long-term laws/regulations; the use of public procurement for climate mitigation; development of instruments promoting life-cycle based norms early in the process; support in the shaping of a biomass market; and changed rules for classification of waste.

The Swedish Government has integrated parts of roadmap requirements into its climate strategizing. In December 2019, the Climate Action Plan submitted a summary to Parliament of 132 ongoing and future governmental policy activities varying in type, specification, resources needed, time perspective, and crossing of policy field – in some respects with clear and acknowledged inspiration from the FFS roadmaps. The action plan was nevertheless criticized by the national Climate Policy Council for lack of specification of how the activities were going to be managed, coordinated and timed. The Council also observed that analyses of the climate mitigating effects and economic consequences were lacking.

The roadmaps were constructed and submitted by market actors represented by industry associations. In that sense, they might be seen as similar to traditional lobby groups or as referral responses. However, the market actors have been invited to construct roadmaps for a specific common purpose and provide inputs to the government for further discussions. This is a more participative approach, a “whole-of-government approach” used to assemble interests into a common approach recognizing that government is dependent on market actors in designing and implementing policies (Christensen & Lægheid, 2007). The developed roadmaps all witness the need for a strong and collaborative state.

### **How can policy and market practices interact to promote a fossil-free economy?**

The market concept refers to conditions and contexts for the voluntary exchange of goods and services. Markets are characterized by complexity, multiplicity and dynamics in terms of how they are structured, organized and performed. Furthermore interactions, exchange relationships and network dependencies are typical features on which technical and economic innovations depend.

We refer to concepts used to analyze market practice as the interdependence between three categories: *market representation* practice that describes and analyzes markets; *market normalization* practice that defines the formal and informal norms, e.g. calculation of values, life-cycle based norms, sanctions and rewards; and *market exchange* practice that results in attributes of goods and services exchanged between buyers and sellers (Kjellberg & Helgesson, 2007).

The Climate Action Plan lists a great number of policy activities aimed to affect and change formal and informal norms for market exchange, how market aspects and processes are accounted for and how public agencies should act as buyers on the market. Thus to understand the development towards a fossil-free economy it is crucial to observe and analyze how these different practices cultivate and are translated into fossil-free market exchange.

### Advice for a post-COVID-19 reopening of the economy

Five years of business and government activities for reaching the objectives of the Paris Climate Agreement of 2015 have so far resulted in technical and economic innovation processes across all important economic sectors and in substantial government efforts to promote these innovations. However, as witnessed by measures indicating too slow progress in emissions reduction and the critique of the Climate Action Plan, this development must accelerate, stimulated by the quick and norm-changing government reaction to COVID-19 and the potential of restructuring the whole economy.

Different interests must be joined to tackle the grand climate change challenge and to understand that government plays a major role for markets to perform as arenas for both competition and cooperation. The Fossil Free Sweden roadmaps and the governmental Climate Action Plan provide a base for continued interaction in a whole-of-government perspective, with specific attention to the speed, sequencing and coordination of activities.

### THE AUTHORS

**Svenne Junker** is Research Fellow at the Center for Research on Sustainable Markets (CRSM) at SIR, Stockholm School of Economics Institute for Research. He is also a senior policy investigator at National Financial Management Authority.

**Lars-Gunnar Mattsson** is Professor Emeritus at the Department of Marketing and Strategy at Stockholm School of Economics.

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