



INTERVIEW

A SHADOW PRICE OF CARBON FOR A TIMELY AND ORDERLY TRANSITION



Alain Quinet,

Deputy Chief Executive Officer, SNCF Réseau

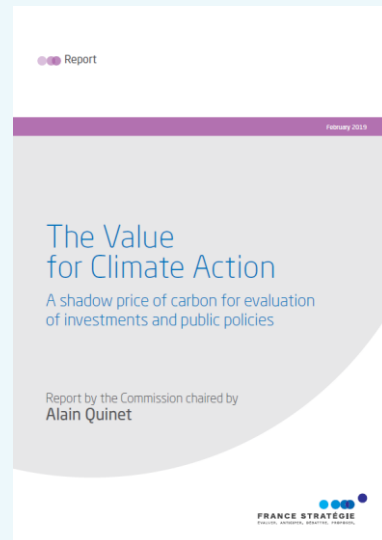
Alain Quinet, an Inspecteur Général des Finances, has worked in French public institutions since 1988. He has been Economic and Financial Advisor at the Prime Minister's Office (2002-2007), and Chief Financial Officer at Caisse des Dépôts (2008-2010) and Chairman of CDC Infrastructure. He is now Chief Operating Officer of SNCF Réseau and Co-Chair of PRIME, the platform of European Railways Infrastructure Managers. He is the Chairman of the French Commission on the Shadow Price of Carbon and the author of numerous articles and reports on Climate change, Long-term investing and Infrastructure.

SNCF Réseau is the owner and manager of the French railway infrastructure. Its main activities relate to commercialization, organization of train services and development of rail traffic, maintenance and enhancement of rail assets and development of the network. Since 2016, SNCF Réseau has performed a major renovation programme of its rail network and initiated an innovating funding through Green Bonds. With a total outstanding amount of € 5.4 Bn, SNCF Réseau Green Bond Programme position is ranked 2nd among French market issuers and 7th worldwide (excluding sovereign States). The assets financed thanks to the proceeds are investments related to maintenance, upgrades and energy efficiency of the rail system and investments related to implementation of new rail lines and rail lines extensions. SNCF Réseau has developed a unique and truly innovative approach to impact reporting that makes it possible to assess the carbon footprint of its entire green bond programme.

Q1. What was the purpose of your report and to what extent does it nourish the public debate about climate action? Could you please summarize it in a few words and key figures?

Our report titled "*The value for Climate Action – A shadow price of carbon for evaluation of investment and public policies* (February 2019)"* is a guide for climate action. It aims at being a reference or toolbox to achieve decarbonization at the lowest cost.

It identifies the value per ton of CO₂e abated to be factored into all economic actors' decisions so that France achieves carbon neutrality by 2050. We modelled the trajectory towards the "Net-Zero Emissions goal" and ended with the following time-bound targets: 54 €/tCO₂eq in 2018; 87 €/tCO₂e in 2020; 250 €/tCO₂e in 2030; 500 €/tCO₂e in 2040 and 775 €/tCO₂e in 2050.



* France Stratégie (February 2019), Report by the Commission chaired by Alain Quinet – Title in French : « *La valeur de l'action pour le climat. Une valeur tutélaire du carbone pour évaluer les investissements et les politiques publiques* ». Title in English: *The Value for Climate Action - A shadow price of carbon for evaluation of investments and public policies*.

Available here:

<https://www.strategie.gouv.fr/sites/strategie.gouv.fr/files/atoms/files/fs-the-value-for-climate-action-final-web.pdf>

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Q2. Is the concept of carbon value a synonym for carbon pricing?

No, it is not exactly. The carbon value trajectory aims at setting a socioeconomic value for GHG abating projects (so as to constitute a “green capital” to decarbonize our economy).

It enables to assess the climate value for the community of various actions or projects. For some public transportation infrastructures for instance, this value for climate action would act as a positive incentive, improving their net present value (NPV) by taking into account avoided emission and reflect their future positive impact. We can thereby calculate the share of NPV related to GHG emissions in the evaluation of public investment projects. For example, the “Climate Value” of the Grand Paris Express program doubles (from 6.8M€ to 12.6 M€), at least if you assume that Road transport is not decarbonized.

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Q3. Why did the targeted value per ton of CO2 increase so sharply compared to the recommendations from the first Commission on the shadow price of carbon in 2008?

If we compare France’s new objective of “Carbon Neutrality with the former objective of a “Factor 4” , there is a relatively small difference in terms of absolute Mt/CO2. However, our 2019 Report concluded that

the efforts required and the technological feasibility between both goals are significantly different. Net carbon neutrality objective requires tackling “hard-to-abate” emissions *via* technologies that are not yet commercially available. It is why the target value per ton of CO2 we have modelled is dramatically higher.

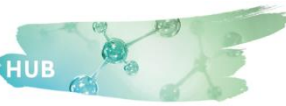
Q4. What guidance does the report provide to public and private decision makers? Could you explain the cost-effectiveness analysis you have been using?

We exhort economic actors to act in the right order, meaning according to a merit-order based on the cost and climate benefits of carbon mitigation actions. Such an approach is derived from a cost-effectiveness analysis as opposed to a cost-benefit analysis. We put emphasis on the notion of “trajectories” to provide predictability and milestones upon the value of action for climate, as well as clear guidance regarding the actions that must be undertaken forthwith.

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Q5. How should we conciliate economic growth and decarbonization? How can we manage the tradeoff, if there is one, between the difficulty of “making ends meet every month” and the concern regarding the “end of the world”?

The proposed approach aims at avoiding sunk costs or biting the GDP too hard. There are a few low-hanging GHG emissions savings that are not fully tapped into in France, for instance in the building sector. Overall, the additional investment cost needed to transition our economy ranges only between 5 to 10%. But such a figure hides the large-scale capital redeployment which is necessary. There is also an obvious question of skills. In sectors like real estate and construction, lifetime trainings are difficult to set-up because the market is highly fragmented.

Q6. What is your opinion on the urgent and yet barely initiated efforts to include “brown industries” into the sustainable finance market?

Today, every economic sector must be tackled. A deep decarbonization of the economy requires to enlarge the perimeter of public and private actions to fight climate change. Although the potential for GHG savings significantly varies from one sector to another - in terms of volume, unit cost, substitutability and decarbonization rate - it does not mean that efforts on hard-to-abate sectors must be delayed. The cost-effectiveness analysis has also to be carried within sectors.

Q7. What is the time horizon of heat-processing industries’ decarbonization?

Both the International Energy Agency (IEA) and the French “Stratégie nationale bas-carbone” (SNBC) highlight that industrial sectors are required to significantly reduce their emissions from 2050 onwards. It is noteworthy that a large bet is made on

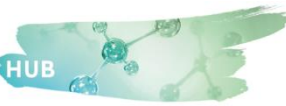
carbon capture sequestration (CCS) at two levels: on the one hand at an emission point (cf. facilities level) and on the second hand at a diffuse level (cf. natural carbon sinks like forestry). One wonders the social acceptance of CCS technologies.

Our aptitude to dramatically reduce GHG emissions from those hard-to-abate sectors but also from maritime transportation will be largely determined by international cooperation and breakthrough technologies. Such forays require to spread the high cost of innovation on a large basis of participants through technical and institutional cooperation. I believe that international governance is nowhere more needed than for those sectors.

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Q8. How can we analyze investors' critical stance on the financing of energy efficiency projects in fossil fuel industries due to fear of carbon lock-in?

I believe that the role of the financial sector is to channel capital flows towards projects that have the highest carbon abatement potential while generating revenues, not to be judgmental about the intrinsic virtue of sectors or activities. Climate finance role is to be a thermostat gauging what projects make sense in terms of carbon emission abatement and profitability.

Q9. What are the existing incentives, including policies, to spur the decarbonization of industries? Are they sufficient?

The EU ETS market is neither designed nor calibrated for the carbon neutrality objective. Such a calibration upon this end objective needs to be considered in the forthcoming fine-tuning of the mechanism by the European Union decision-makers.

Meanwhile, a range of tools is required to alleviate the social and job consequences of decarbonization through buffer mechanisms (for instance, differentiated pricing of emission quotas reflecting international competition exposure).

We know from experience that enterprises under the EU ETS tend to be more innovative. High oil prices also spur innovation. Some enterprises have their own carbon pricing - between €30 to €80, notably to support R&D projects.

Lastly, I believe that risk-sharing instruments are mighty. They differentiate from habits and routine thinking revolving only around Keynesianism and public expenditures-based policies, or, on the opposite, only around strict financial incentives (through subsidies). Such de-risking tools are halfway in terms of State interventionism and can provide seed or development capital. Examples in internet high-debit rollout are interesting, combining technical and financial innovation.