

CORONAVIRUS : VIEW OF A CRISIS

Terra Nova's "Coronavirus: views of a crisis" series of contributions endeavours to provide a platform for sharing ideas, accounts and questions generated by the Covid-19 pandemic and its widespread consequences. We wanted on this occasion to invite contributions from a wide range of external partners from varied backgrounds, including observers, participants and experts, thereby creating an open laboratory of ideas. The ideas expressed do not necessarily reflect Terra Nova's collective positions.



ENVIRONMENTAL AND HEALTH CO-BENEFITS OF PUBLIC ACTION : IT'S (ALSO) THE ECONOMY, STUPID !

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Story or legend, the "It's the economy, stupid!" slogan that supposedly helped bring Bill Clinton to power in 1992, highlights the tendency of voters to prioritize the economy in times of crisis. After the lockdown imposed by Covid-19, there may be a strong temptation, when developing and implementing an exit strategy, to favour taking into account directly observable economic impacts, without any other considerations, as was the case after the 2008 crisis. Here we show that any exit policy must be subject to a broad set of requirements which values the economic, environmental and health "co-benefits" of public action. Among other examples, decarbonized transportation measures (from bicycles to rail freight) have direct effects in terms of the economy (jobs, added value in the sectors involved), the environment (reduction of air pollution which costs France about 50 billion euros/year, reduction of greenhouse gas emissions) and health (this same pollution kills 50,000 people/year, and weakens populations when they are exposed to pandemics).

*Doing this is a matter of responding to "social demand": in the same way, as Emmanuel Macron recently observed, when we emerge from the crisis, "people will no longer tolerate breathing polluted air"^[1]. And, since between the triggering of the subprime crisis in 2008 and the exit from the emergency phase of the Covid-19 crisis, French debt will have increased by 50% of GDP, reducing the public authorities' margin for budgetary manoeuvres, maximizing the co-benefits of action is no longer simply an option, it is an imperative :
"It's (also) the economy, stupid! "*

MAKING EACH EURO OF PUBLIC MONEY SPENT COUNT THREE-FOLD IN EXIT POLICY

We are facing a public health crisis that will have a major economic impact all over the world. This impact is virtually impossible to forecast, since there are so many unknowns: growth, unemployment and debt are all variables linked to the public health trajectory, which remains uncertain for doctors, and consequently even more so for economists.

An obvious logic applies to the sequencing of collective action: at the height of the health emergency, the priorities are to contain the epidemic, to ensure the continuity of services essential to the functioning of society and to massively mobilise resources to boost the health system. During this period, the economic safeguarding of immobilized activities involves paid furlough schemes and assisting companies with their cash flow. However, beyond this "economic resuscitation" phase, a crisis exit policy will have to be deployed to meet the demand for resilience which will emerge in European societies, including France.

In a context in which there will be constraints on the public resources that can be mobilised, and where the commitment of the latter will drastically reduce future margins for manoeuvre, the optimization of each euro spent is crucial. It is imperative that each euro of public money invested produces the maximum positive effect for society, which not only supposes an analysis of the observable short and medium-term economic impacts, but also, more widely, the integration of associated benefits into the selection of public action measures (i.e. the "co-benefits" in economist jargon).

[1] *Financial Times* interview, 16 April 2020. See video here: <https://www.facebook.com/8860325749/posts/10158243484920750/>

In this spirit, and unlike the emergence from the crisis in 2008, it is vital to identify the actions which offer co-benefits in three areas :

- The economy : by contributing to the revival of activity in industrial sectors and essential services, and also by reducing the risk of exposure to future crises (collapses in oil prices, most recently in 2018, food and industrial supplies, etc.).
- The environment : by reducing emissions of greenhouse gases and local air pollutants, thereby maintaining credibility in terms of the Green Deal and international climate action, by preserving industrial capital in low-carbon sectors, and by adapting our economy to climate disruption.
- The health sector : by reducing potential weaknesses in the face of health threats that are now less hypothetical, notably by improving air quality and reducing energy poverty which makes low-income households more vulnerable.

What do we mean by "*It's (also) the economy, stupid!*" ? The exit strategy for the 2008 crisis and public actions during the following years did not improve the "resilience" of society to subsequent disruptions. Dependence on oil, which triggered the Yellow Jackets crisis in 2018, was not reduced. Poor airquality, which continues to cost public authorities approximately 50 billion euros and kill 50,000 people in France every year[2] - without taking into account its aggravating effects with regard to Covid-19 - has not been improved. The poor-quality housing in which more than 3 million households are in lockdown - and whose health is weakened by these living conditions[3] - has been insufficiently improved. Our communities remain poorly prepared for climate disruption which has already cost more than 60 billion euros over recent decades[4].

Much of the increase in public debt, observed in this century, was thus preventable. Be that as it may, optimizing all the co-benefits of public action is no longer a simple option, but an imperative. And It should help keep the economy in shape.

[2] See the summary of these issues in a recent bulletin from the French Treasury: "*Le rôle des instruments économiques dans la lutte contre la pollution de l'air*", ("The role of economic instruments in the fight against air pollution"), Trésor-Eco, no. 256, February 2020. See also regular Senate proceedings, including: "*Lutte contre la pollution de l'air : au-delà du risque contentieux, une urgence sanitaire*" ("The fight against air pollution: beyond the risk of litigation, a health emergency"), Information Report No. 412, 2018.

[3] See Elsa Bidault, Camille Bellois, Jennifer Daude, "*Revue des approches existantes pour l'analyse des impacts de la précarité énergétique sur la santé des populations*" ("Review of existing approaches for the analysis of the impacts of energy poverty on the populations' health", ONPE, 2019, as well as the work of the "Rappel Network" : <https://www.precarite-energie.org/les-risques-sanitaires-de-la-precarite-energetique-etat-de-l-art-et-fiches/>,

[4] According to the European Environment Agency, France reported 62 billion euros of economic losses linked to climate change between 1980 and 2017, corresponding to more than 1,000 euros per person; only 50% of this damage was insured, which means that nearly 30 billion euros had to be borne directly by the impacted households, businesses and public authorities. <https://www.eea.europa.eu/data-and-maps/indicators/direct-losses-from-weather-disasters-3/assessment-2>

WHEN NEGLECTING CO-BENEFITS SKEWS PUBLIC ACTION

The search for co-benefits has for a long time been one of the explicit objectives of climate policies, appearing as early as the mid-1990s in the IPCC's work[5]. Yet attention and decisions have tended to focus on the costs of implementation of climate policies, with co-benefits remaining a subsidiary consideration; this was despite macroeconomic work on the "double dividend" concept, combining a reduction of certain existing taxes - on work in particular - and a carbon tax. While it is essential to calculate the costs of reduction in order to guide public action and establish a shared effort between nations, all co-benefits need to be analysed and taken into account in order to avoid distortions in decisions and failures in the achievement of objectives[6].

Such a bias is all the more damaging since co-benefits have a very specific value in terms of guiding public action during periods of crisis : while the direct benefits of the reduction of greenhouse gases are global, some co-benefits, such as the reduction of air pollution, are directly observable at the regional level and in the short term, all of which are conducive to the mobilization of resources and the emergence of local consensus. Moreover, it is not the fear of a penalty but rather this approach of taking into account the co-benefits which constitutes, in the Paris Agreement, the driving force behind the action of States - motivated by their best interests.

Much work has been carried out that confirms that integrated assessment models which do not take co-benefits into account inevitably underestimate the real benefits of climate action, which is particularly detrimental since these co-benefits are not of a secondary order. By way of example :

- The health benefits of CO₂ reduction have been estimated to be between 40 and 198 USD per ton (depending on the country considered)[7].
- The global annual reduction in premature deaths could be 0.5 million in 2030 and 1.3 million in 2050[8].

[5] Christophe Cassen, Céline Guivarch, Franck Lecocq, *Les co-bénéfices des politiques climatiques : un concept opérant pour les négociations climat ?* (Co-benefits of climate policies: a potential keystone of climate negotiations?), *Natures Sciences Sociétés*, EDP Sciences, 2015. The literature on these topics is summarized in a recent collective book: W. Buchholz et al., *Ancillary Benefits of Climate Policy. New Theoretical Developments and Empirical Findings*, Springer Climate, 2020.

[6] Karlsson, M., Alfredsson, E., Westling, N., "Climate policy co-benefits: a review", *Climate Policy*, 2020.

[7] Balbus, J. M., Greenblatt, J. B., Chari, R., Millstein, D., & Ebi, K. L., "A wedge-based approach to estimating health co-benefits of climate change mitigation activities in the United States", *Climatic Change*, 2014.

[8] West, J.J., Smith, S.J., Silva, R.A., Naik, V., Zhang, Y., Adelman, Z., Fry, M., Anenberg, S., Horowitz, L.W., Lamarque, J.-F., 2013, "Co-benefits of mitigating global greenhouse gas emissions for future air quality and human health", *Nature Climate Change*, 3, 885-889..

- The cost of the damage is reduced by 6.5% of global GDP when fossil fuels are replaced by clean energies[9].
- At the global level, the related benefits in terms of air quality represent approximately 75 % of the costs of reduction[10].

The conclusion of these studies is clear and particularly valuable: integrating these co-benefits into the direction of public action is crucial. This is all the more true since all of these assessments were made before the onset of the Covid-19 crisis, i.e. without taking into account the effects of avoiding future pandemics (through the preservation of biodiversity, whose value must also be debated) or the capacity to face them with more resilience (through the reduction of poor quality housing, the shortening of certain value chains, etc.). The co-benefits of climate action will therefore have to be reassessed when we emerge from the Covid-19 crisis. It seems highly unlikely that there will be any logical reason - quite the contrary in fact - for the role of these co-benefits to be minimized after this collective ordeal.

Box 1 : Economical costs of air pollution in France[11]

"From a review of the literature in 2013, the Commissariat Général au Développement Durable(Sustainable Development Division of the Ecology Ministry) assessed the health costs of outdoor air pollution in France (loss of individual well-being, and the financial costs to the health care system) at between 20 and 30 billion euros per year, comparable for example to those for obesity. In 2015, a Senate inquiry committee report on the economic and financial costs of air pollution proposed a significantly higher estimate with health costs of between 68 and 97 billion euros per year, i.e. up to more than 5% of the gross domestic product. In addition, there are non-health-related costs estimated at over 4 billion euros in the Senate report, among which are environmental impacts, including on biodiversity and agricultural yields. The estimate of the overall socio-economic cost to the community remains subject to substantial uncertainty, with significant sensitivity to certain assumptions, in particular the monetary value of years of life lost".

Source : Trésor, Le rôle des instruments économiques dans la lutte contre la pollution de l'air ("The role of economic instruments in the fight against air pollution"), Trésor-Eco, n° 256, February 2020

[9] Coady, D., Parry, I., Sears, L., Shang, B., May, "How large are global energy subsidies?", IMF Working Paper WP/15/105, 2015.

[10] Andersen, M. S., "Co-benefits of climate mitigation: Counting statistical lives or life-years?", *Ecological Indicators*, 201. Bollen, J., "The value of air pollution co-benefits of climate policies: Analysis with a global sector-trade CGE model called WorldScan", *Technological Forecasting and Social Change*, 2015.

[11] Voir également les travaux réguliers du Sénat, dont : "Lutte contre la pollution de l'air : au-delà du risque contentieux, une urgence sanitaire", ("The fight against air pollution: beyond the risk of litigation, a health emergency"), Rapport d'information n° 412, 2018.

EXITING THE 2008 CRISIS: LOSS OF ENVIRONMENTAL MOMENTUM DUE TO NEGLIGENCE OF CO-BENEFITS

The experience of 2008 demonstrated that a crisis exit strategy without climate objectives causes a long-term lagging effect, which partly explains the delay accumulated by 2020 and signalled by the French High Council for the Climate^[12]. An analysis of the 2008 recovery plan - based on a different set of circumstances, but comparable in the magnitude of the impact - sheds light on the effect of not taking the co-benefits of public action into account and can inform the choices involved in the 2020 health crisis.

The French recovery plan, announced by the President of the Republic on 4 December 2008, consisted of an initial commitment of 26 billion euros, increased to 35 billion with corrective measures in April 2009. On this basis, the French plan represented 1.1% of GDP - one above the bottom row of major developed countries, ahead of Italy - with an effort mainly concentrated in 2009 and an emphasis on investment (public and private), which accounted for 50% of the overall commitment.

Looking specifically at the "public investment" component (Figure 1), 8.5 billion euros were at best neutral in the short term for the climate, but certainly represented "missed opportunities" to green the economy; and at worst were unfavourable for the climate.

Figure 1 : Estimation of amounts of public investment that were friendly/unfriendly to the climate or energy transition in the 2008 recovery plan

Component	Total (billions of euros)	Friendly	Neutral/undetermined	Unfriendly
Exceptional effort of 4 billion euros for government investments	4.1	0.8	3.4	0.0
Exceptional investment effort for public companies	4.1	1.3	2.6	0.2
Support for local authorities investment	2.5	0.0	2.5	0.0
TOTAL	10.7	2.0	8.5	0.2

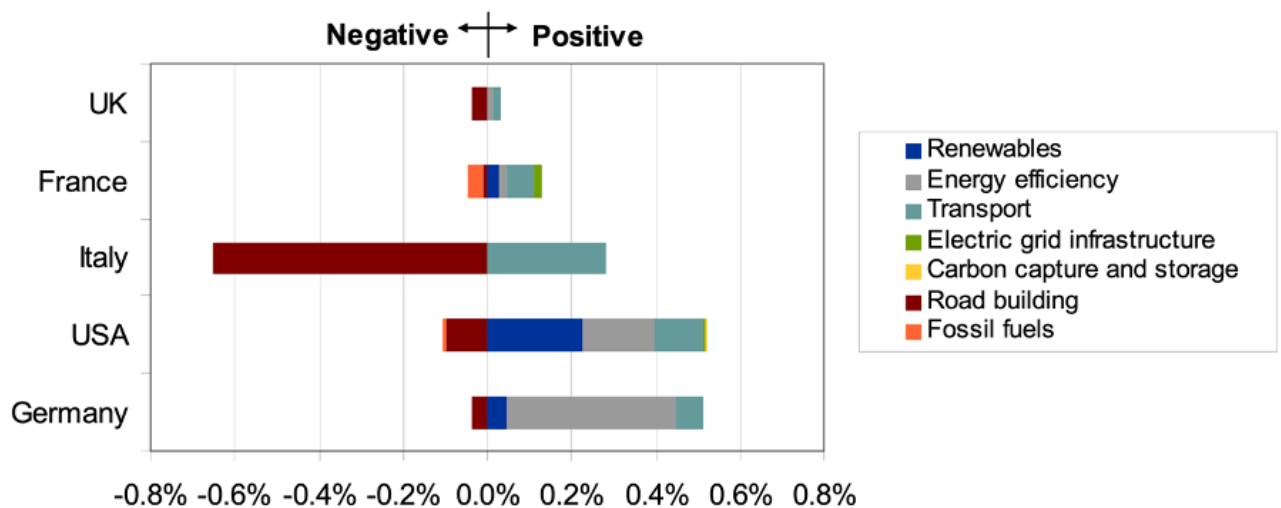
Source : Calculations by the authors, based on the Press Kit - Plan for the recovery of the French economy, Douai 4 December 2008

[12] I4CE, *Panorama des financements climat* (Climate funding panorama), 2019 edition.

Other evaluations confirm a mixed picture of the French recovery plan. Ecofys carried out an environmental analysis of the French recovery plan, and the plans of five other countries or regional zones. For France, the Ecofys study made the following conclusions :

- Climate-friendly measures represent a relatively small proportion of the total amount (2.1 billion euros, or approximately 8%), with incentives for renewable energy (photovoltaic), energy efficiency in buildings, transportation, and electricity networks.
- But this plan also included support for unfavourable activities, accounting for 300 million euros (about 1% of the total), with the construction of roads and support for electric power stations running on fossil fuels.

Figure 2 : Favourable and unfavourable climate action effects in the 2008 recovery plans (% of GDP)



Source : Ecofys, *How climate friendly are the economic recovery packages?*, April 2009.

The consequences of this orientation were long-lasting :

- Public support for low-carbon funding-increased only marginally until 2017, and public incentives/regulations did not thwart a rebound in fossil fuel investments in France from 2015 onwards - coinciding with the fall in oil prices^[13] - a phenomenon that was to have long-term effects - notably on car ownership/production.
- France was then poorly prepared for the rise in oil prices in 2018, a triggering factor in the Yellow Jackets crisis, with its unfortunate consequences.

[13] High Council for the climate, *Annual Carbon Neutrality Report*, June 2019.

- Furthermore, the delay in the deployment of decarbonized forms of transport hindered the improvement of air quality, whose collective cost is massive - a "silent" killer which is currently far worse than Covid-2019[14].
- The difficulty in achieving targets relating to housing renovation - i.e. reaching a rate of 500,000 per year - has not permitted a sufficient reduction in the health risks to vulnerable populations - due to thermal discomfort, dampness, mould, and poor indoor air quality - and has increased the difficulties of lockdown and plausibly its consequences.

Box 2 : Illustration of measures likely to produce a variety of co-benefits[15]

Unlike in 2008, the maturity of low-carbon industries enables the targeting of a wide range of measures likely to generate various economic, environmental and health benefits. The "open list" below is intended to stimulate reflection through the examples provided :

- *accelerate the thermal renovation of hospitals and care homes in such a way as to be able to deal with very hot weather, without excessive use of air-conditioning.*
- *prioritize the thermal renovation of households suffering from energy poverty, to improve living conditions (in the face of excessive cold and heat, future epidemics, etc.) and reduce the health problems from which they tend to suffer more frequently.*
- *replace urban and peri-urban vehicle fleets with low-carbon vehicles (electric, bioNGV) to contribute to the improvement of air quality (and the reduction of noise pollution), and encourage short, low-impact supply chains.*
- *encourage a shift to rail freight to further contribute to the improvement of air quality and increase the efficiency of logistics chains (a positive factor in the context of relocation strategies) ;*
- *promote circular economy mechanisms by recycling agricultural waste to generate renewable natural gas (which can be used as bioNGV for transport), and to enable farmers to diversify their activities.*
- ...

[14] At least at the time of writing, at the end of April 2020, and when Covid-19 had caused approximately 25,000 deaths in France, or half of the number of lives shortened by air pollution in a "normal" year.

[15] See H. Hainaut., M. Ledez, Q. Perrier, B. Leguet, P Geoffron, *Investir en faveur du climat contribuera à la sortie de crise* ("Climate-friendly investment can contribute to recovery from the crisis"), I4CE, 2020.

IN 2020, EUROPE IS A FERTILE ENVIRONMENT FOR CO-BENEFITS

The sole purpose of this evaluation, made with the benefit of hindsight on decisions taken during the previous major crisis, is to inform the decisions to be taken in 2020 and beyond, and to respond to the demand for increased resilience that is sure to arise.

Integrating co-benefits into public decisions is not only a necessity, but also a source of hope for Europeans. Studies have long-established the benefits of climate action for the EU as a whole, for example, according to Van Vuuren et al. (2006)[16], the co-benefits alone for air quality related to the achievement of the European objectives of the Kyoto Protocol represented approximately 50 % of the costs of implementation of this policy; Schucht et al. (2015)[17] reassessed this proportion at 85%. Dechezleprêtre et al. (2019)[18], noted that an increase in the concentration of fine particles (PM_{2.5}) of 1 µg/m³ (corresponding to an average increase of approximately 10% in Europe) resulted in a contraction in GDP of 0.8%, and concluded that the economic costs greatly exceed those of reducing such pollution.

These studies echo estimates made on a national basis, such as those by Krook Riekkola et al. (2011)[19], who found that Swedish climate policy generated health benefits representing up to 32 euros per tonne of reduction in CO₂ emitted. Significant co-benefits have also been revealed in the context of analyses carried out at the European city scale, such as Rotterdam[20] or Barcelona, Malmö, Sofia and Fribourg[21].

[16] Van Vuuren, D. P., Cofala, J., Eerens, H. E., Oostenrijk, R., Heyes, C., Klimont, Z., Amann, M., "Exploring the ancillary benefits of the Kyoto Protocol for air pollution in Europe", *Energy Policy*, 2006.

[17] Schucht, S., Colette, A., Rao, S., Holland, M., Schopp, W., Kolp, P., Rouil, L., "Moving towards ambitious climate policies: Monetised health benefits from improved air quality could offset mitigation costs in Europe", *Environmental Science and Policy*, 2015.

[18] Dechezleprêtre, A., Rivers, N., Stadler, B., "The economic cost of air pollution: Evidence from Europe", OECD Economics Department Working Papers No. 1584, 2019.

[19] Krook Riekkola, A., Ahlgren, E. O., & Söderholm, P., "Ancillary benefits of climate policy in a small open economy: The case of Sweden", *Energy Policy*, 2011.

[20] Tobollik, M., Keuken, M., Sabel, C., Cowie, H., Tuomisto, J., Sarigiannis, D., Mudu, P., "Health impact assessment of transport policies in Rotterdam: Decrease of total traffic and increase of electric car use", *Environmental Research*, 2016.

[21] Creutzig, F., Mühlhoff, R., Römer, J., "Decarbonizing urban transport in European cities: Four cases show possibly high co- benefits", *Environmental Research Letters*, 2012.

To appreciate the diversity of co-benefits, beyond air quality, we can refer to Sovacool et al. (2020) who estimate a wide range of economic, environmental, technical, social and political benefits based on a very "granular" study of Germany, France, Norway and Great Britain[22].

This is very much the view of the High Council for Climate, in its special report of April 2020[23], which stresses the need for France to take into account the co-benefits of climate action : "...[the recovery] should be green, not grey, maximizing the co-benefits for the climate and ecosystems, and not locked into fossil fuel based trajectories. The synergies between climate, environment and health need to be strengthened - reinforcing the fight against pollution and imported deforestation, improving nutrition in diets, and changing modes of transport." It thus makes these recommendations on the orientation of an emergency strategy on the basis of a few simple criteria : "*It must contribute directly to a just low-carbon transition - mitigation, adaptation, reduction of vulnerabilities and reinforcement of resilience capacities; while it is primarily assigned to another field of expenditure (such as health or biodiversity), it has a climate co-benefit in terms of reduction or adaptation; it must not harm or be incompatible with the Paris Agreement objectives, in particular avoiding any carbon lock-in effects*".

Specifically for France, we can also refer to an I4CE (2020)[24] work in progress which has selected seven sectors likely to produce economic, environmental and health co-benefits through public stimulus as part of an exit strategy: the renovation of private housing, the renovation of service industry buildings (public and private), the deployment of low-carbon vehicles, public transport infrastructures, rail infrastructure, cycling facilities, and the production of renewable electricity[25].

Finally, we would like to highlight the conclusions of a recent IRENA study[26] which estimates the effects of a low-carbon transition to be of the order of 100 trillion USD in cumulative gains for world GDP by 2050, or nearly 400 USD global per capita annual gain.

[22] Sovacool, B.K. , Martiskainen, M., Hook, A., Baker L., "Beyond cost and carbon: The multidimensional co-benefits of low carbon transitions in Europe", *Ecological Economics*, 2020

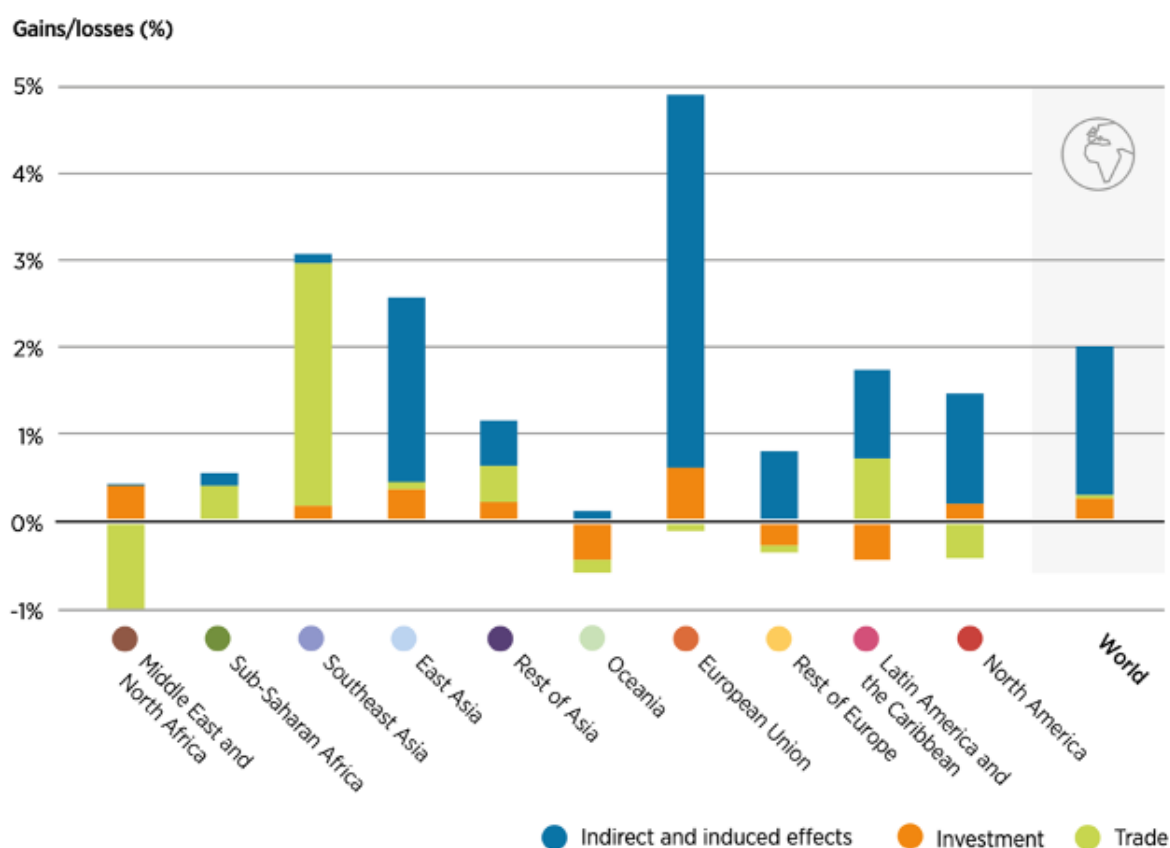
[23] Haut Conseil pour le Climat, "*Climat, santé : mieux prévenir, mieux guérir*", ("Climate and health: better prevention, better healing") April 2020.

[24] Hainaut., H., Ledez M., Perrier., Q., Leguet., B., Geoffron, P., "*Investir en faveur du climat contribuera à la sortie de crise*", ("Climate-friendly investment can contribute to recovery from the crisis"), I4CE, 2020.

[25] This study will be extended to include other areas of activity.

[26] Source: IRENA, "Global Renewables Outlook: energy transformation 2050", 2020.

Figure 3 : Effects of a low-carbon transition on growth



Source : IRENA, *Global Renewables Outlook : Energy transformation 2050*, 2020.

While the distribution of these gains is uneven between regions, for the European Union it could represent up to 3,000 USD per capita per year, provided discernment is demonstrated in crisis exit strategies, at the start of the 2020s.

The collective debate on the Green Deal is therefore crucial for the European Union, even more so than before the pandemic. And, if France wants to contribute to enhancing the Union’s ambitions, it will have to demonstrate a coherent approach, by developing a national strategy that optimizes the co-benefits of public action.