CLIMATE BANG FOR THE BUCK

HOW TO INVEST BEST TO REDUCE GREENHOUSE GASES

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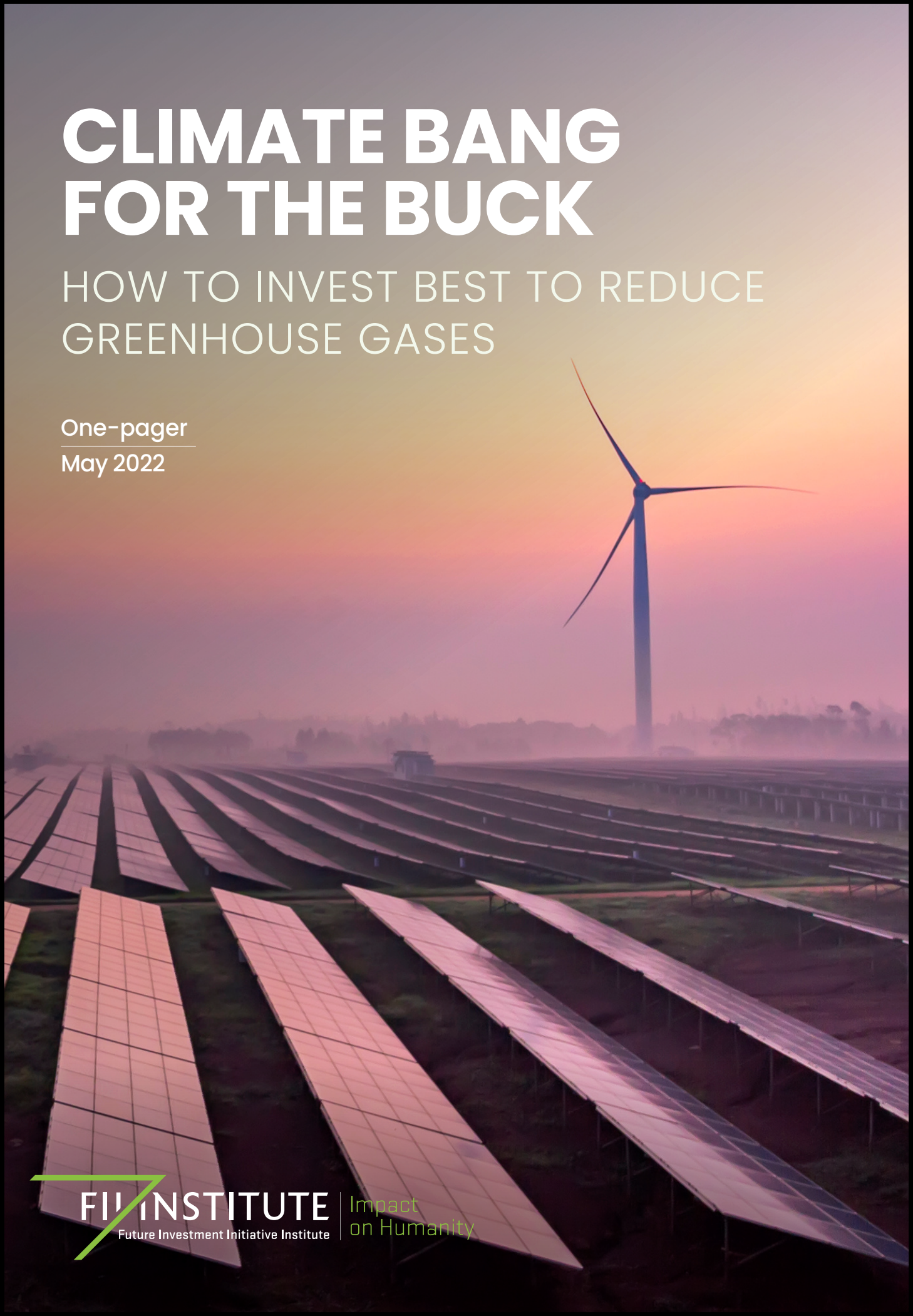

FII INSTITUTE
Future Investment Initiative Institute
Impact on Humanity

BEST PRACTICE FOR CLIMATE INVESTMENT

The issue at stake: Resources are scarce, and the challenge is huge: To fight climate change as efficient as possible, we should globally invest in the mitigation technologies that can reduce greenhouse gases most efficiently. But what are they?

WHY IT MATTERS

The Global Heating challenge is huge, and urgent. Mean temperature has already risen by more than 1.0 degrees during the last century; and given the ongoing emissions of greenhouse gases (GHG), it is bound to rise further. 1.5 degrees max – that was the target set by the global community at the Climate Summit of Paris in 2015. Now, just seven years later, climate scientists see this target already as good as unreachable. Even to limit the rise of global temperature to 2.0 degrees above pre-industrial levels, economies and societies need to act massively to reduce greenhouse gases emissions to net zero.

Parts of this titanic effort surely can be done via reducing consumption of carbon-based products. But the biggest parts have to come via investment in GHG-saving technologies. And there are a lot of them – from solar power plants to carbon capturing to walkable cities.

We can't invest in all of them at the same time. Even if we take the global economy as a whole, resources are limited. So like every household and every company does it, humanity as a whole should also strive to implement only the most efficient investments. There's no need to spend billions on inefficient pet projects, we should invest in the mitigation technologies that can reduce greenhouse gases most efficiently.

Unfortunately, the earth has no investment committee yet. Money is spent where the budgets are, not where the efficiency is. Solar panels in Norway eg make definitely no sense: They don't replace fossil fuels (Norway's electricity comes mostly from hydropower), Norway has rather little sunshine, and the panels only produce energy when it is needed the least, as during the cold heating-intensive winters, the sun barely rises. Any panel anywhere in India would reduce greenhouse gases more – but nevertheless, solar power capacity in Norway has risen tenfold since 2015.

But now the International Panel on Climate Change (IPCC) has done a first step towards a global climate investment committee. Its latest report on Climate Change from April 2022 contains a (highly complex) chart that shows for about 40 different GHG reduction technologies,

- how much reduction they can achieve, and
- for which price.

In the table below, we have only included the most efficient part of these investments: the ones that do not cost money, but save money, because the financial return on investment outweighs the costs. All these measures combined could reduce the global GHG emissions by more than 10 Gigatons of CO_2 equivalent per year – a whopping 20 percent. The lion's share of these low-hanging fruits, more than 5 Gigatons, can be achieved by the expansion of solar and wind energy production.

On first sight, the actual investments to avert climate change seem to follow the pattern of the IPCC recommendation. Roughly half of the money flows into solar and wind power, about a quarter into more sustainable transport technologies. But once we dive below the surface of aggregated numbers, significant divergences from the path of maximum efficiency show up. One striking example: For vehicles, the IPCC recommends mostly the increase of fuel efficiency for cars and trucks; but the overwhelming share of real investment goes into electric vehicles. This seems to be the more attractive choice, but not the more efficient one.

Climate change is a global issue. Detecting and implementing the globally most efficient GHG reduction investments would be the best way to master it. But we're not there yet.

Cost-saving Greenhouse Gas Reduction

	Reduction/year	
Investment in	In Mt CO_2e	In %
Solar energy	2800	26.7%
Wind energy	2300	21.9%
Nuclear energy	250	2.4%
Fuel efficient vehicles	1000	9.5%
Shift to public transportation	550	5.2%
Shipping - efficiency and optimization	550	5.2%
Shift to bikes and e-Bikes	250	2.4%
Aviation - energy efficiency	250	2.4%
Reduce CH_4 emissions from oil, gas and coal	500	4.8%
Efficient lighting, appliances, equipment	800	7.6%
Avoid demand for energy services	600	5.7%
Reduce CH_4 emissions from solid waste	350	3.3%
Reduce emission of flourinated gas	300	2.9%

Source: IPCC report, April 2022

Actual Climate Investments

	Investment/year	
Investment in	in bn$	in %
Wind energy	157	25.0%
Solar energy	139	22.2%
Other energy	36	5.7%
Private road transport	83	13.2%
Rail, public transport	13	2.1%
Other transport	77	12.3%
Industry	7	1.1%
Buildings/infrastructure	29	4.6%
Land use	14	2.2%
Water	22	3.5%
Others	50	8.0%

Source:Source: Climate Policy Initiative, December 2021, data for 2019/20

CALL TO ACTION

1 **Assess efficiency:** In line with the IPCC recommendation, GHG mitigating investments should be assessed according to their economic and ecological efficiency.

2 **Rank investments globally:** The impact of the most important GHG mitigation technologies and investment projects should be comparable in global rankings.

3 **Redirect capital flows:** Instead of aligning climate investments only to national interests, at least a part of the budget should be spent for the globally most efficient GHG reduction projects.

ABOUT FII INSTITUTE

FII INSTITUTE is a new global nonprofit foundation that has an investment arm and one agenda: Impact on Humanity. Global, inclusive and committed to Environmental, Social and Governance (ESG) principles, we foster great minds from around the world and turn ideas into real-world solutions in five critical areas: Artificial Intelligence (AI) and Robotics, Educa- tion, Healthcare and Sustainability.

We are in the right place at the right time: when decision makers, investors and an engaged generation of youth come together in aspiration, energized and ready for change.

We harness that energy into three pillars: THINK, XCHANGE, ACT.

Our THINK pillar empowers the world's brightest minds to identify technological solutions to the most pressing issues facing humanity. Our XCHANGE pillar builds inclusive platforms for international dialogue, knowledge sharing and partnership.

Our ACT pillar curates and invests directly in the technologies of the future to secure sustainable real-world solutions.

Join us to own, co-create and actualize a brighter, more sustainable future for humanity.

This Thought Piece was produced by the THINK Pillar at the FII Institute. In THINK we believe that by integrating what is desirable from a human point of view with what is technologically feasible and economically viable, we can create the solutions for a better world. At the FII Institute, our mission is to empower the brightest minds for all, with all to create a positive global community for all. This is the heart of THINKs strategy: building a global momentum to impact change, working with esteemed partners and enhancing our thought leadership to ensure that we focus on impacting humanity positively.

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