Indonesia’s Green Fiscal Stimulus packages as response to COVID-19 over FY2020-2021

August 2021

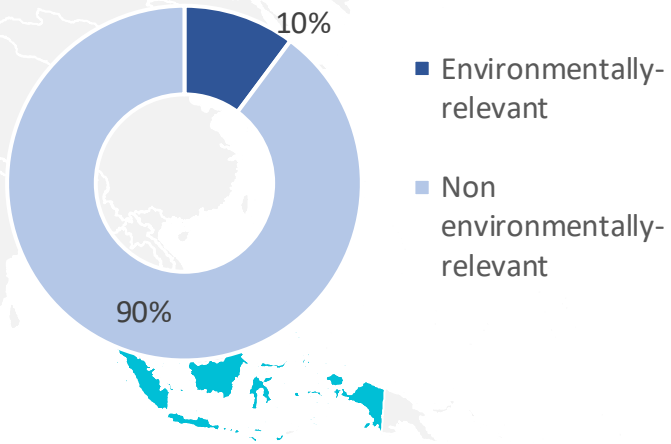
Summary of Stimulus Packages FY2020-21

Total Stimulus Packages IDR 1,453 trillion

Environmentally relevant stimulus IDR 150 trillion (10%)

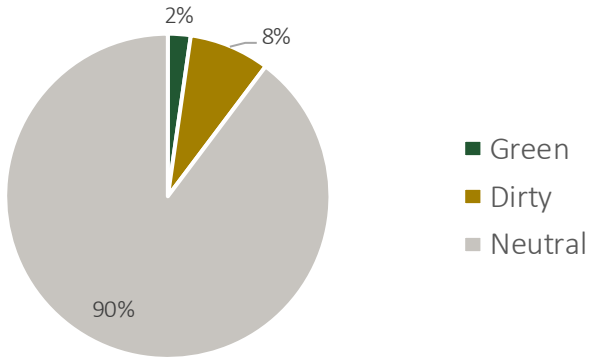
Green stimulus IDR 29.2 trillion (2% of total)

Share of Indonesia's environmentally-relevant stimulus package

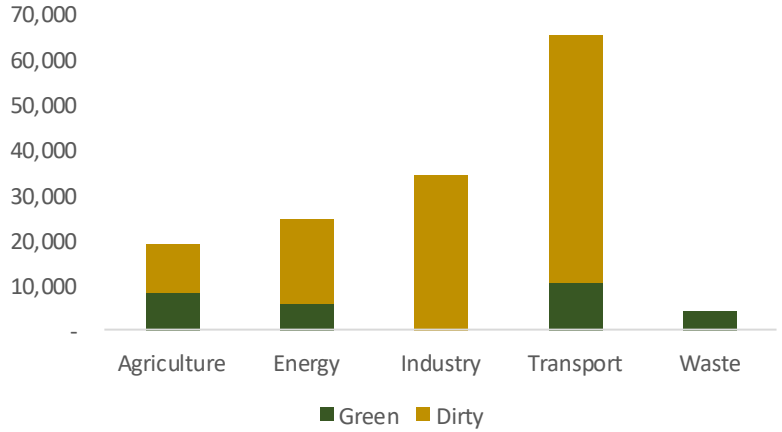


Summary of Stimulus Packages FY2020-21

Share of Indonesia's stimulus packages based on greenness



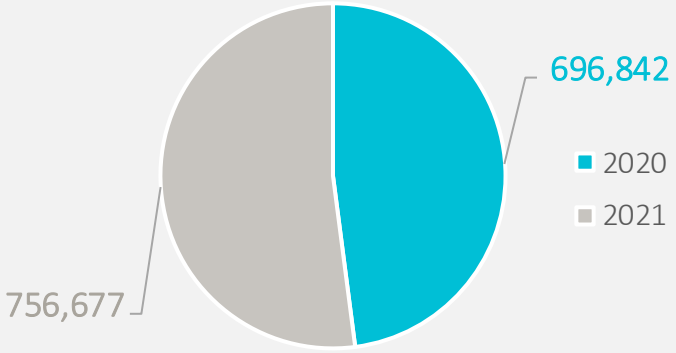
Size of environmentally-related stimulus packages by sector (IDR billion)



- Indonesia's environmentally-relevant stimulus is IDR 150.7 trillion (10.4% of total) over the period FY2020-21, which mostly allocated to support the transport sector.
- Indonesia's non-environmentally relevant stimulus is IDR 1,302 trillion (89.6% of total) over the period FY2020-21, mostly allocated supporting healthcare, small and medium-sized businesses, and households.
- Most of Indonesia's environmentally-relevant stimulus are categorized as 'dirty' receiving a stimulus of IDR 121.5 trillion (8% of total), while 'green' stimulus are only accounts for IDR 29.2 billion (2% of total).
- Most of the environmentally-relevant stimulus are supporting the transport sector, followed by industry, energy, agriculture and waste. Transport sector received Rp65.5 trillion, while the remaining sectors receive Rp34 trillion, Rp27 trillion, Rp19 trillion, and Rp4 trillion in respective order.
- All of these sectors, however, are allocated with a substantially higher 'dirty' stimulus, except waste sector.

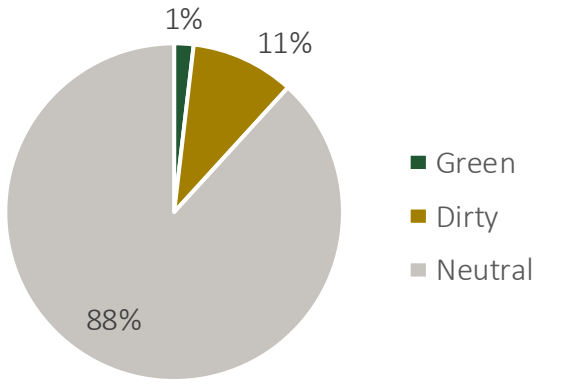
Summary of Stimulus Packages FY2020-21

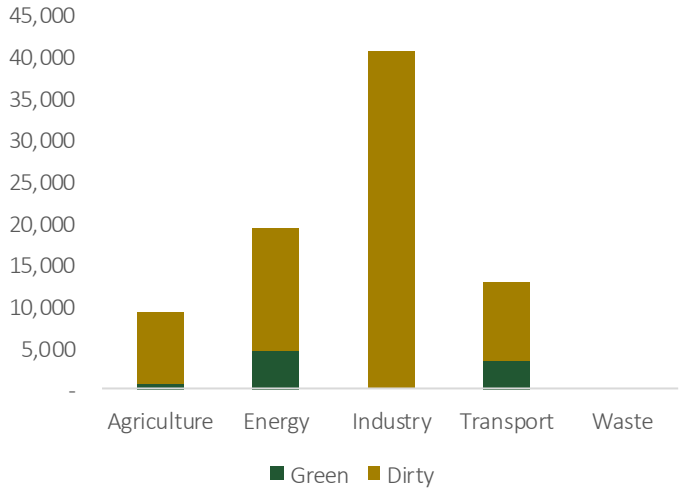
Total Stimulus Packages FY2020-21 (IDR billion)



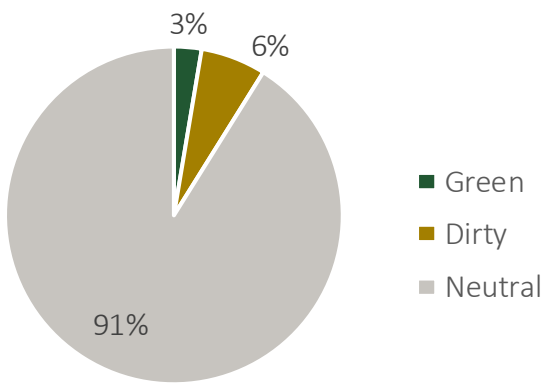
- Stimulus packages announced in 2020 and 2021 amount to Rp696.8 trillion and Rp756.7 trillion respectively
- There is a 124% increase in 'green' stimulus from Rp8.9 billion in 2020 to Rp20 billion in 2021
- This increase comes from higher 'green' stimulus for the industry, agriculture, and transport sector. Meanwhile, 'green' stimulus to the energy sector decreased in 2021

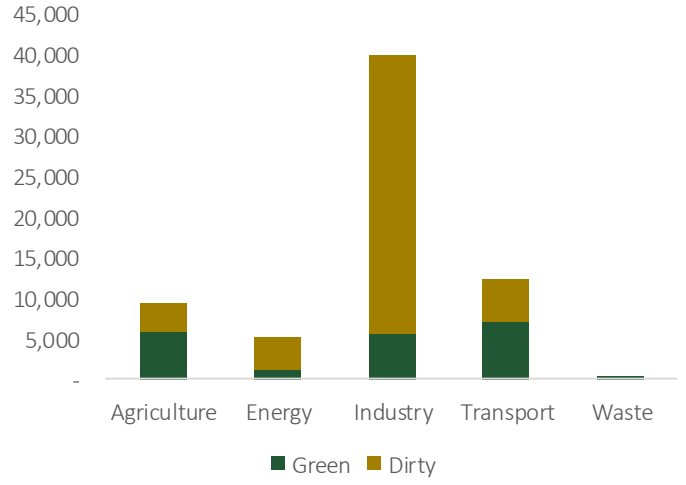
Stimulus packages based on greenness and sectors FY2020





Stimulus packages based on greenness and sectors FY2021





Methodology of Assessing Green Fiscal Stimulus

1. Mapping the green fiscal stimulus packages FY2020-21
   a. Identify the environmentally-relevant stimulus and non-environmentally relevant stimulus
   b. Categorize environmentally-relevant stimulus based on 5 sectors (agriculture, energy, industry, transport, waste)
   c. Categorize environmentally-relevant stimulus based on 11 policy archetypes (Table right-side)
2. Quick assessment on effectiveness of green fiscal stimulus packages in FY2020-21
   a. Categorize environmentally-relevant stimulus into positive and negative policy archetypes (positive = 'green' stimulus, negative = 'dirty' stimulus)
   b. Analyze two components of the stimulus: size of the fiscal flow (F value) and the overall impact of that stimulus on the climate and environment (B value)

Sectors	Positive Policy Archetypes
All sectors	Bailouts with green strings attached
All sectors	Loans and grants for green investments
All sectors excl. agriculture	Green R&D subsidies
All sectors excl. agriculture	Subsidies or tax reductions for green products
Agriculture	Nature-based solutions
Agriculture	Conservation and wildlife protection programmes

Sectors	Negative Policy Archetypes
All sectors	Subsidies or waived fees for environmentally harmful activities
All sectors	Deregulation of environmental standards
All sectors	Environment related bailout without green strings
All sectors excl. agriculture	Environmentally harmful infrastructure investments
All sectors excl. waste	Subsidies or tax reductions for environmentally harmful products

Stimulus packages announced based on policy archetypes and sectors

Policy Archetypes	Agriculture	Energy	Industry	Transport	Waste
Bailouts with green strings attached					
Green infrastructure investments					
Green R&D subsidies					
Subsidies or tax reductions for green products					
Nature-based solutions					
Conservation and wildlife protection programs					
Subsidies for environmentally harmful activities					
Environmentally harmful infrastructure investments					
Deregulation of environmental standards					
Environment related bailout without green strings					
Subsidies/tax reductions for environmentally harmful products					

'Green' 'Dirty' Archetypes are not available for the sector

Source: Oxford Smith School, IMF, Ministry of Finance

Transport sector received the highest environmentally-relevant stimulus, where 83% of it was considered as 'dirty'

Stimulus measure	Size (IDR bn)	Greenness
Bailout for PT Kereta Api Indonesia (Railway SOE) 2020	3,500	
Support to KAI for the construction of LRT – 2021	7,000	
Flight discounts for tourists visiting 10 designated tourist destinations	443	
Incentives for airlines and travel agencies	99	
Jet fuel discounts to nine airports	266	
Capital injection to state-owned airline, Garuda Indonesia	8,500	
Support for airlines industry through flight ticket incentives	1,480	
Incentives on added value tax for luxury goods (PPnBM) for the purchase of luxury vehicles	2,990	
Labor intensive program for road improvements, development of airports, maintenance of infrastructure	787	

'Green' 'Dirty'

Total IDR 65.5 trillion

Share to total 4.5%

Green funding IDR 10.5 tn

Dirty funding IDR 55 tn

Industry received the second highest environmentally-relevant stimulus package, however majority is supporting the 'dirty' sectors

Stimulus measure	Size (IDR bn)	Greenness
Research and capacity building for Green Industry Standard compliance for med-large sized green industries	112	
Subsidies for low-cost housing	3,000	
Tax incentives for manufacturing industry	22,450	
Support to Perumnas to finance low-cost housing	650	
Support to Krakatau Steel	3,000	
Support to Hutama Karya (state-owned infrastructure) for the construction of toll road – 2020	11,000	
Support to ITDC for the development of tourism zone	500	
Incentives for landed houses and apartments 2021	5,000	
Cash for work road & bridge maintenance program	1,678	
Cash for work program for regional infrastructure development	900	
Support to Waskita Karya (state-owned infrastructure)	7,900	
Support to Hutama Karya for the construction of toll road 2021	19,000	

'Green' 'Dirty'

Total IDR 34.2 trillion

Share to total stimulus packages 2.4%

Green funding IDR 112 bn

Dirty funding IDR 34 tn

AFOLU sector received Rp19 trillion of stimulus, where 44% of it contributes to green activities

Stimulus measure	Size (IDR bn)	Greenness
Labor-intensive program for irrigation rehabilitation network	124	
Cash for work program through mangrove planting activities	406	
Restoration of coral reefs in Bali – 2020	111	
Labor-intensive coral reefs restoration programs in 9 locations – 2021	750	
Labor-intensive program for fishery irrigation, marine aquaculture, mangrove rehabilitation	406	
Labor-intensive program for pest control, tillage and plantation, irrigation network, agriculture reservoirs, and pumping	771	
Mangrove rehabilitation and forest zone affirmation program 2021	1,260	
Labor-intensive irrigation program for agriculture water use	2,700	
Conservation and cultivation of herbal plantations	72	
Support to PTPN for expenses on fertilizers and off-farm plantations	4,000	
Food estate program 2020	4,540	
Food estate program 2021	3,420	

‘Green’ ‘Dirty’

Total IDR 19 trillion

Share to total 1.3%

Green funding IDR 8.4 tn

Dirty funding IDR 10.6 tn

Energy sector received Rp 27.5 trillion, where 79% of it was considered as ‘dirty’

Stimulus measure	Size (IDR bn)	Greenness
Subsidies for biodiesel fuel	2,780	
Bailout to PLN for solar PV & hydro 2020	1,000	
Bailout to PLN for renewable energy 2021	2,000	
Industrial gas price reductions for 2020	473	
Industrial gas price reductions for 2021	437	
Electricity subsidies 2020	3,500	
Electricity subsidies and extension of 2021	3,600	
Capital injection to oil & gas SOE, Pertamina	2,115	
Capital injection to electricity SOE, PLN	4,600	
Deregulation bill (mining)	N/A	

Total IDR 27.5 trillion

Share to total 1.9%

Green funding IDR 5.8 tn

Dirty funding IDR 21.7 tn

‘Green’ ‘Dirty’

Waste sector received the least environmentally-relevant stimulus of Rp 4.4 trillion

Stimulus measure	Size (IDR bn)	Greenness
Support for labor intensive waste productivity and support for tourism conservation	277	
Cash-for-work for the construction of waste management sites	90	
Cash-for-work program for drinking water and sanitation	3,056	
Cash-for-work program for slumless city, including drainage revitalization and rehabilitation of communal biofil septic tanks	976	

‘Green’ ‘Dirty’

Total IDR 4.4 trillion

Share to total 0.3%

Green funding IDR 4.4 tn

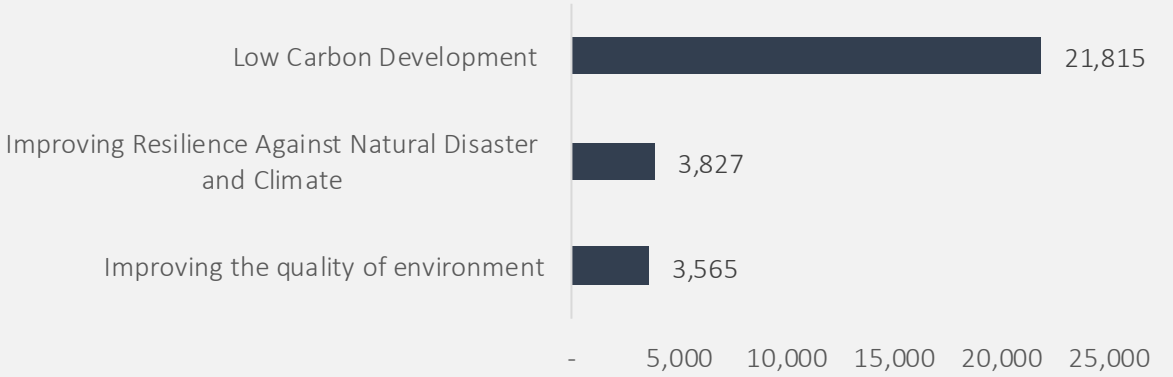
Dirty funding 0

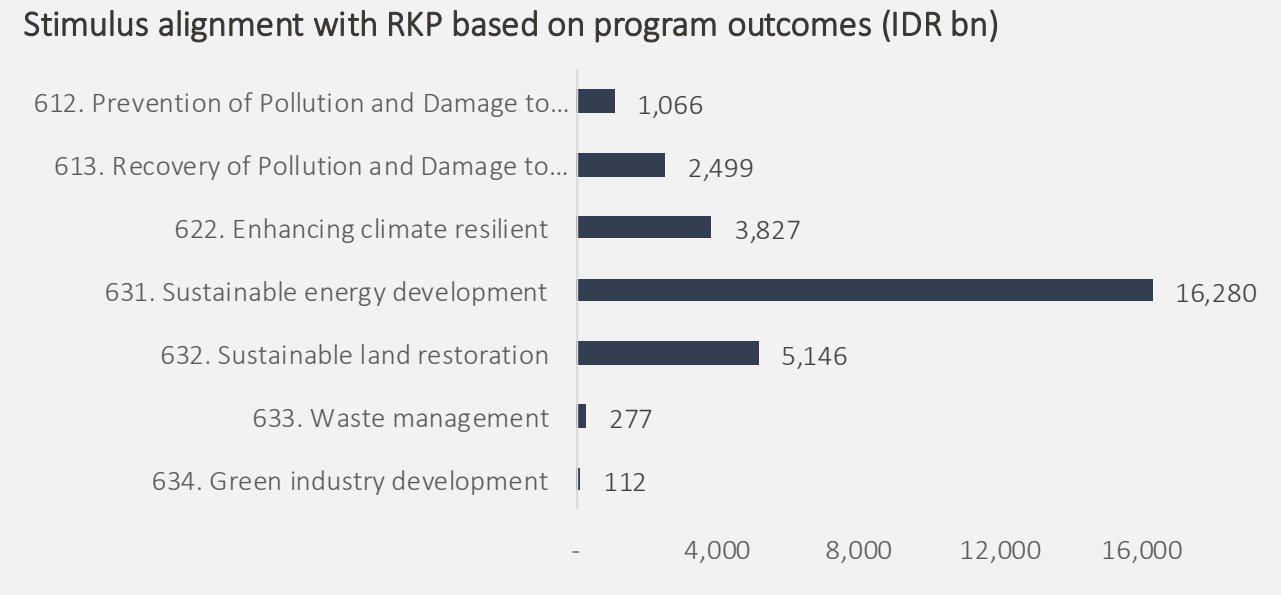
Summary of stimulus packages FY2020-21

Amount in IDR billion

FY2020-2021	Total	Environmentally-relevant		Non-environmentally relevant	% green of total
		Green	Dirty	Neutral	
A. Environmentally-relevant stimulus					
Agriculture	19,073	8,416	10,657	-	1%
Energy	27,504	5,780	21,724	-	0.40%
Industry	34,212	112	34,100	-	0%
Transport	65,542	10,500	55,042	-	0.72%
Waste	4,399	4,399	-	-	0%
Sub-total	**150,730**	**29,207**	**121,523**	**-**	**2.01%**
B. Non-environmentally relevant stimulus					
Healthcare/public services	480,927	-	-	480,927	-
Households/social	389,200	-	-	389,200	-
Business	429,492	-	-	429,492	-
Sub Total	**1,299,619**	**-**	**-**	**1,299,619**	**-**
TOTAL	1,450,349	29,207	121,523	1,450,349	

Stimulus alignment with priority program outcomes in RKP





- Most stimulus packages (86%) are contributing to low-carbon development program in RKP, followed by improving resilience (10%) and improving quality of environment (5%).
- However, more than 80% of it was considered as 'dirty' or negatively contributing to priority programs in RKP.
- These 'dirty' stimulus is mainly attributed by negative support to sustainable land restoration, green industry development, and sustainable energy development through measures such as housing subsidies, tax incentives, and bailouts to fossil fuel.
- Meanwhile, it is identified that Rp28.9 trillion is considered as 'green' or positively supporting priority outcomes in RKP through programs in sustainable energy development, enhancing climate resilient, sustainable land restoration, and recovery of pollution & damage to natural resources.

Stimulus alignment with priority program outcomes in RKP

Amount in IDR billion

Stimulus based on priority program outcomes in RKP			IDR bn
1	Improving the quality of environment		2,802
	611	Restoration of Ex Mining Land and Land Contaminated with B3 Waste	112
		Capacity building for Green Industry Standard (incl. standards for B3 waste management)	112
	612	Prevention of Pollution and Damage to Natural Resources and The Environment	162
		Development of technology for seeding and cultivation of herbal plants	72
		Construction of Waste Management sites for reduce, reuse, and recycle	90
	613	Recovery of Pollution and Damage to Natural Resources and the Environment	2,527
		Mangrove planting	1,666
		Coral reefs restoration program	861
	614	Institutional Strengthening & Law Enforcement in the Field of Natural Resource and the Environment	-
2	Improving Resilience Against Natural Disaster and Climate		6,728
	621	Disaster management	-
	622	Enhancing climate resilient	6,728
		Marine aquaculture program	406
		Road drainage revitalization program for floods anticipation	1,400
		Drinking water supply program	3,056
		Slumless City Program (drainage revitalization, improvement of environmental roads, rehabilitation of communal biofil septic tanks)	976
		Labor-intensive program for pest control, tillage and planting, agricultural reservoirs, swamp land optimization, irrigation and pumping and anticipation of droughts and floods	771
		Certification for tourism industry to ensure health and environmental sustainability	119

3	Low Carbon Development		19,438
	631	Sustainable energy development	16,338
		Support to PLN for hydro and solar PV	1,000
		Tax incentives for renewable energy projects	715
		Installations of solar rooftop	175
		Installations of solar street lighting and renewable plants revitalization	1,168
		Subsidies for biodiesel fuel	2,780
		Support to KAI for light-railway transit (LRT) construction	10,500
	632	Sustainable land restoration	2,824
		Irrigation network and road improvement for farmers	124
		Improvement of irrigation water use for ricefields	2,700
	633	Waste management	
		Labor intensive waste productivity program	277
	634	Green industry development	-
	635	Low-carbon coastal & marine	-
		TOTAL	28,968

Findings

1 Agriculture, forestry, and land use

NDC sectors & RKP output	RKA/KL 2021 (IDR mn)	Green Stimulus (IDR mn)	Dirty Stimulus (IDR mn)
Agriculture, forestry, land use	**18,800**	**686**	
632. Sustainable land restoration			
6321. Peatland restoration and management			
6322. Land forest rehab and reforestation			
6323. Reducing the rate of deforestation			
6324. Increasing agriculture productivity and efficiency		280	
635. Low carbon coastal marine			
2365. Utilization of coastal areas and small islands	18,800		
6351. Inventory and rehabilitation of coastal and marine			
613 Recovery of pollution and damage to natural resources and the environment			
6131 Peatland restoration		406	
6133 Recovery of damage to the marine and coastal environment			

- Current stimulus: As part of National Economic Recovery Program (PEN), the government has extended Rp686 mn of funding under the MoEF's Food Estate & Mangrove program.
- Opportunities:
  - The government has allocated a budget to support the Food Estate program reaching Rp104 trillion
  - There is an opportunity to extend cash for work upon sustainable agriculture practices
  - Other countries (e.g. Malaysia, Thailand) have provided measures such as Forest Plantation Development Loan program and implementation of sustainable agriculture project

Findings

2 Energy

NDC sectors & RKP output	RKA/KL 2021 (IDR mn)	Green Stimulus (IDR mn)	Dirty Stimulus (IDR mn)
Energy	**1,234,357**	**33,185**	**15,530**
631. Sustainable energy development			
6352 New Renewable Energy and Energy Conservation Management	66,50		
6353 Planning, Development and Supervision of New Energy Infrastructure, Renewable and energy Conservation	1,167,855		
6311. Renewable energy management			
6312. Energy efficiency and conservation			

- Current stimulus: As part of National Economic Recovery Program, the government has extended Rp175 bn to support the solar rooftop program (Program Surya Nusantara), while the APBN 2020 extended Rp144 bn for this program
- Opportunities:
  - The allocation to support the Program Surya Nusantara is Rp15 trillion to install 1 GWp of solar rooftop for subsidized households annually
  - Currently, electricity subsidies under PEN is Rp7.1 tn – there is opportunity to redirect this for the installation of solar rooftop
  - PEN allocation for Employment Card (Program Kartu Prakerja) could consider to include relevant trainings to support employment in the solar rooftop sector

Findings

3 Transport

NDC sectors & RKP output	RKA/KL 2021 (IDR mn)	Green Stimulus (IDR mn)	Dirty Stimulus (IDR mn)
Transport	**1,234,357**	**15,797**	
631. Sustainable energy development			
6352 New Renewable Energy and Energy Conservation Management	66,50		
6353 Planning, Development and Supervision of New Energy Infrastructure, Renewable and energy Conservation	1,167,855		
6311. Renewable energy management			
6312. Energy efficiency and conservation			

4 Industry

NDC sectors & RKP output	RKA/KL 2021 (IDR mn)	Green Stimulus (IDR mn)	Dirty Stimulus (IDR mn)
Industry	**8,700**	**119**	
634. Green industry development	8,700		
6341. Application of process and technology			

- Current stimulus: Existing stimulus does not have program for sustainable transport, except bailout for railway company.
- Opportunities:
  - Program in transport has been limited in the NDC, while the RPJMN indicates substitution of fuel oil as mitigation action in transport sector
  - However, current PEN shows multiple support for the use of carbon-intensive fuel (e.g. jet fuel discounts, luxury car tax exemptions)
  - There is an opportunity to redirect subsidies to biofuel as fuel substitute, and in the industry sector, opportunity towards value-added manufacturing, such as battery production for EVs.

International comparison

Summary of international green stimulus

Amount in USD billion

No	Summary of green policies	Indonesia	Malaysia	Philippines	Nigeria	Brazil	Mexico
1	Low carbon development	1.35	4.65	0.32	1.17	1.24	2.35
1.1	Sustainable energy development	0.40	3.13	0.14	0.89	0.94	0.55
1.2	Sustainable transport	0.72	0.92	0.03	-	0.30	1.75
1.3	Sustainable land restoration	0.19	0.12	-	-	-	-
1.4	Waste management	0.02	-	0.14	-	-	0.05
1.5	Green industry development	0.01	0.48	-	0.27	-	-
1.6	Low-carbon coastal & marine	-	-	-	-	-	-
2	Improving Resilience Against Natural Disaster and Climate	0.46	0.29	0.24	0.02	-	0.88
2.1	Disaster management	-	0.03	0.10	-	-	-
2.2	Enhancing climate resilient	0.46	0.26	0.14	0.02	-	0.88
3	Improving the quality of environment	0.19	0.05	-	-	-	0.10
3.1	Restoration of Ex Mining Land and Land Contaminated with B3 Waste	-	0.03	-	-	-	-
3.2	Prevention of Pollution and Damage to Natural Resources and The Environment	0.01	0.02	-	-	-	0.10
3.3	Recovery of Pollution and Damage to Natural Resources and the Environment	0.17	0.00	-	-	-	-
3.4	Institutional Strengthening & Law Enforcement in the Field of Natural Resource and the Environment	-	-	-	-	-	-
TOTAL		2.00	5.00	0.56	1.19	1.24	3.33
Total stimulus		100	143	30	13	593	60
% green of total stimulus		1.99%	3.49%	1.84%	9.30%	0.21%	5.55%
GDP 2020 (USD bn)		1,058	337	361	432	1,445	1,076
% green stimulus of GDP		0.19%	1.48%	0.15%	0.28%	0.09%	0.31%

Indonesia's green stimulus

Amount in USD billion

No	Summary of green policies	Size
1	**Low carbon development**	**1.35**
1.1	Sustainable energy development	0.40
1.1.1	New renewable energy management	
	Support to PLN for hydro and solar PV	0.07
	Tax incentives for renewable energy projects	0.05
	Installations of solar rooftop	0.01
	Installations of solar street lighting and renewable plants revitalization	0.08
1.1.2	Energy efficiency and conservation	
	Subsidies for biodiesel fuel	0.19
1.2	Sustainable transport	0.72
	Support to KAI for light-rail transit (LRT) construction	0.72
1.3	Sustainable land restoration	0.20
	Irrigation network and road improvement for farmers	0.01
	Improvement of irrigation water use for ricefields	0.19
1.4	Waste management	
	Labor intensive waste productivity program	0.02
1.5	Green industry development	
	Green industry standardization	0.01
	Development of technology for seeding and cultivation of herbal plants	0.005
1.5	Low-carbon coastal & marine	-
2	**Improving Resilience Against Natural Disaster and Climate**	**0.46**
2.1	Disaster management	-
2.2	Enhancing climate resilient	0.46
2.2.1	Protection of coastal marine sector vulnerabilities	
	Labor-intensive program for fishery irrigation & marine aquaculture	0.03
2.2.2	Protection in Water Resilience in Climate Vulnerable Areas	
	Road drainage revitalization program for floods anticipation	0.10
	Drinking water supply program	0.21
	Slumless City Program (drainage revitalization, improvement of environmental roads, rehabilitation of communal biofil septic tanks)	0.07
2.2.3	Protection of food security against climate change	
	Labor-intensive program for pest control, tillage and planting, agricultural reservoirs, swamp land optimization, irrigation and pumping and anticipation of droughts and floods	0.05
2.2.4	Protection of Public Health & Environment and the Impact of Climate Change	
	Certification for tourism industry to ensure health and environmental sustainability	0.01
3	**Improving the quality of environment**	**0.18**
3.2	Prevention of Pollution and Damage to Natural Resources and The Environment	
	Construction of Waste Management sites for reduce, reuse, and recycle	0.01
3.3	Recovery of Pollution and Damage to Natural Resources and the Environment	0.17
	Mangrove planting	0.11
	Coral reefs restoration program	0.06
TOTAL		2.00

Notes: PLN = state-owned electricity, KAI = state-owned railway company

- Indonesia has announced US$100 billion of stimulus packages, where green stimulus consists of 2% of total stimulus or US$2 billion.
- Most stimulus packages (68%) are contributing to low-carbon development program, followed by improving resilience (23%) and improving quality of environment (9%).

Malaysia's green stimulus

Amount in USD billion

No	Summary of green policies	Size
1	**Low carbon development**	**4.65**
1.1	Sustainable energy development	3.13
1.1.1	New renewable energy management	
	LED street lighting, transmission lines and rooftop solar panels installations	3.12
	Open the tender for 1,400MW for solar power generation	N/A
1.1.2	Energy efficiency and conservation	
	SAVE 2.0 program, which is an e-Rebate of 200 ringgit to households who buy any energy efficient locally manufactured air conditioner or refrigerator	0.007
1.2	Sustainable transport	0.92
	Extension of financing scheme to maritime logistics, sustainable development, and public transport fund	0.89
	Expansion of Stage Bus Service Transformation Programme	0.04
1.3	Sustainable land restoration	
	Provide a fund Forest Plantation Development Loan (PPLH) programme	0.12
1.4	Waste management	-
1.5	Green industry development	
	Green Technology Financing Scheme 3.0	0.48
1.5	Low-carbon coastal & marine	-
2	**Improving Resilience Against Natural Disaster and Climate**	**0.29**
2.1	Disaster management	
	Assistance to repair dilapidated houses and those damaged by natural disasters	0.03
2.2	Enhancing climate resilient	0.26
2.2.1	Protection in Water Resilience in Climate Vulnerable Areas	
	Allocation for rural and alternative water supply with a target of 4,800 houses	0.15
	Install tube well water supply for buildings and infrastructure in 50 dilapidated schools	0.03
	Raw Water Transfer Project from Sungai Kesang and Tasik Biru to the Jus Reservoir, Jasin , Melaka	0.04
2.2.2	Protection of Food Security Against Climate Change	
	Implementation of the Organic Agriculture project	0.01
3	**Improving the quality of environment**	**0.05**
3.1	Restoration of Ex Mining Land and Land Contaminated with B3 Waste	0.03
	Allocation to strengthen environmental quality monitoring enforcement	0.01
	Ecological Fiscal Transfer activities to ensure the sustainability of the country's biodiversity	0.017
	Strengthen the Biodiversity Protection and Patrol Program	0.005
3.2	Prevention of Pollution and Damage to Natural Resources and The Environment	0.02
	Allocation for Malaysian Sustainable Palm Oil Certification	0.005
	Fund to address waste and solid waste trapped in rivers	0.012
	Government allocation for MySDG Trust Fund	0.006
3.3	Recovery of Pollution and Damage to Natural Resources and The Environment	
	Integrated Island Waste Management project to reduce the effects of coral reef destruction and marine life	0.002
TOTAL		5.00

- Malaysia has announced US$143 billion of stimulus packages, where green stimulus consists of 3.5% of total stimulus or US$ 5 billion.
- Most stimulus packages (93%) are contributing to low-carbon development program, followed by improving resilience (6%) and improving quality of environment (1%).

Philippines' green stimulus

Amount in USD billion

No	Summary of green policies	Size
1	**Low carbon development**	**0.46**
1.1	Sustainable energy development	-
1.2	Sustainable transport	
	Develop accessible sidewalks and protected bicycle lanes	0.03
1.3	Sustainable land restoration	-
1.4	Waste management	-
1.5	Green industry development	
	Climate smart technologies (includes solar-powered systems, ecologically sensitive disposal of health care wastes, water treatment facilities)	0.43
1.5	Low-carbon coastal & marine	-
2	**Improving Resilience Against Natural Disaster and Climate**	**0.10**
2.1	Disaster management	
	Rehabilitation of areas impacted by recent floods and typhoons	0.10
2.2	Enhancing climate resilient	-
3	**Improving the quality of environment**	-
TOTAL		**0.56**

- Philippines has announced US$30 billion of stimulus packages, where green stimulus consists of 1.8% of total stimulus or US$ 560 million.
- Most green stimulus (82%) are contributing to low-carbon development program, while the remaining is for improving resilience against natural and climate disaster (18%).
- Philippines has limited green funding in their stimulus, however, the Department of Energy has announced a moratorium on new coal projects in late 2020.
- The government has also announced a Green Energy Option Program (GEOP) which will provide consumers at least 100 kilowatts of power from renewable energy resources, and Green Energy Auction Program (GEAP) which will enable renewable energy developers to supply electricity to distribution utilities and retail suppliers.
- The government has approved a nationwide single-use plastic regulation bill in July 2021. A plastic waste collection program was conducted, where Manila City government in partnership with private companies encourage households to surrender plastic waste for compensation.

Nigeria's green stimulus

Amount in USD billion

No	Summary of green policies	Size
1	**Low carbon development**	**1.17**
1.1	Sustainable energy development	0.89
	Solar Homes Systems Project, which will help install solar home systems to households who are not currently connected to the national grid	0.62
	Natural Gas Expansion Program to promote the use of gas (CNG and LPG), which seen as a bridge from more polluting fossil fuels to cleaner energy	0.27
1.2	Sustainable transport	-
1.3	Sustainable land restoration	-
1.4	Waste management	
1.5	Green industry development	
	Integration of science and technology to increase agriculture and livestock productivity, increase energy resilience through R&D in renewable and alternative energy	0.27
1.5	Low-carbon coastal & marine	
2	**Improving Resilience Against Natural Disaster and Climate**	**0.02**
2.1	Disaster management	
2.2	Enhancing climate resilient	-
	Fast-track the implementation of the National WASH programme	0.02
3	**Improving the quality of environment**	-
TOTAL		1.19

- Nigeria has announced US$12.8 billion of stimulus packages, where green stimulus consists of 9.3% of total stimulus or US$1.2 billion.
- Most stimulus packages (98%) are contributing to low-carbon development program, while the remaining is improving resilience against natural and climate disaster (2%).
- Nigeria has announced US$5.9 billion of National Economic Sustainability Plan in June 2020 to stimulate growth through investment in 10 key projects.
- This includes large scale installation of mini-grids and solar home systems in a minimum of 5 million households who are not currently on the grid.
- It includes National Gas Expansion Programme, which supports the conversion from traditional fuels (kerosene, wood, diesel) to cleaner LPG fuel in 30 million homes, as well as key sectors in agriculture, transport, and industry.
- It also includes WASH Emergency Response Programme, which provide a safe water supply, sanitation and hygiene services, as well as sustainable power solutions for water provision.
- Nigeria is one of the countries that remove fossil fuel subsidies during the pandemic.

Brazil's green stimulus

Amount in USD billion

No	Summary of green policies	Size
1	**Low carbon development**	1.24
1.1	Sustainable energy development	
1.1.1	New renewable energy management	
	Funding of wind farms through Brazil National Development Bank (BNDES)	0.91
	Financing for Small Hydroelectric Power Plant	0.02
	Financing for national manufacturer of blades for wind generators	0.008
1.1.2	Energy efficiency and conservation	
	National Program for Electrical Energy Conservation by providing energy efficiency fund	0.006
1.2	Sustainable transport	
	Green credit line to support biofuel producers to increase competitiveness against gasoline producers	0.29
	Extension of suspension of financing payments in public transport sector	0.01
1.3	Sustainable land restoration	-
1.4	Waste management	-
1.5	Green industry development	-
1.6	Low-carbon coastal & marine	-
2	**Improving Resilience Against Natural Disaster and Climate**	-
2.1	Disaster management	-
2.2	Enhancing climate resilient	-
3	**Improving the quality of environment**	-
TOTAL		1.24

- Brazil has announced US$593 billion of stimulus packages, where green stimulus consists of 0.2% of total stimulus or US$1.2 billion.
- All of the stimulus packages are contributing to low-carbon development program.
- Most of the support are for funding renewable energy, particularly wind projects and small-hydro. Support has also been provided for energy efficiency fund.
- In December 2020, Brazil has announced a new National Energy Plan that set renewable energy target of 45% by 2030, and a commitment to be carbon neutral in 2050 was announced recently in April 2021. The government also has committed to end illegal deforestation by 2030.

Mexico's green stimulus

Amount in USD billion

No	Summary of green policies	Size
1	**Low carbon development**	**2.35**
1.1	Sustainable energy development	-
	Liquefied Natural Gas (LNG) Terminal in Salina Cruz	0.55
1.2	Sustainable transport	
	Modernization and expansion works of the Isthmus of Tehuantepec railway and construction of the five sections of the Mayan Train	1.75
	Expansion of Mexico city cycling network with 54km of new routes	N/A
1.3	Sustainable land restoration	-
1.4	Waste management	
	Management of urban solid waste and the construction of water supply system	0.05
1.5	Green industry development	-
1.6	Low-carbon coastal & marine	-
2	**Improving Resilience Against Natural Disaster and Climate**	**0.88**
2.1	Disaster management	-
2.2	Enhancing climate resilient	0.88
	Allocation for drinking water, drainage systems	0.63
	Two water desalinization and management facilities installations	0.25
3	**Improving the quality of environment**	**0.10**
3.1	Prevention of Pollution and Damage to Natural Resources and The Environment	
	Construction of 30 wastewater treatment plants to improve water infrastructure and expand clean water distribution	0.10
TOTAL		3.33

- Mexico has announced US$60 billion of stimulus packages, where green stimulus consists of 5.5% of total stimulus or US$3.3 billion.
- Most of green stimulus (71%) are contributing to low-carbon development program, followed by improving resilience (26%) and improving the quality of environment (3%).
- Mexico has announced Economic Recovery Agreement that seeks for infrastructure investment plan with a total funding of US$25.6 billion. This includes construction of railway project, two water desalinization and management facilities, and natural gas projects.
- Mexico government has issued two sustainable sovereign bonds linked to SDG goals amounted to US$890 million and US$1.5 billion, of which will be used to finance the promote sustainability and social inclusion projects.

Key findings

- Indonesia ranked 4th in terms of the country with the highest green stimulus to total stimulus (2%) across these 6 countries, after Nigeria, Mexico, and Malaysia.
- Malaysia has the highest green stimulus in terms of absolute value (US$5 billion), while Nigeria shows the highest in terms of relative value to total stimulus (9.3%).
- All selected countries focus on low-carbon development outcomes, while minority of the green stimulus is targeting improving resilience and environmental quality outcomes.
- Under this low-carbon development measures, most stimulus are supporting sustainable energy for all of the countries, except Mexico that have introduced more support to sustainable transport.
- Malaysia is the only country that provided stimulus for sustainable land restoration in a form of Forest Plantation Fund, which provides fund for the development of forest plantations.
- Nigeria is the only country that introduced a sustainability-themed stimulus – National Economic Sustainability Plan – which lays out a recovery plan to stimulate sustainable economic growth through investment in renewable energy, agriculture, and infrastructure.
- Brazil and Malaysia are the only country that provide green stimulus in energy efficiency, where Brazil has provided a national energy efficiency fund that could be accessed by project developers, while Malaysia provided incentives for consumers to buy energy efficient products.
- Philippines and Mexico have provided support for the development of cycling network over the course of the pandemic.

Recommendations in the energy sector

1

- Reallocation of PLN bailout for renewable energy
  - PLN receive Rp14.6 trillion of capital injection, however, only Rp 3 trillion was allocated for construction of solar PV and hydro
  - Major part of the bailout is for the construction of transmission network, village electricity distribution, and operational expenses.
  - Reallocation of the stimulus could be done, for example, to reallocate funding from village electricity distribution – mainly diesel powered – to developing a decentralized renewable energy for village electricity.
- Introduce target for co-firing existing power plant
  - Bailout should be allocated with a target for PLN to co-firing its existing coal power plant with biomass
  - This includes, for example, target for number of coal power plants and portion of substitute biomass (e.g. min 20%), while maintaining a sustainable supply of biomass raw materials
- Reallocation of electricity subsidies for solar power program
  - Indonesia has allocated Rp7.1 trillion for subsidizing electricity and Rp910 billion for industrial gas price reduction, while support for solar program only accounts for Rp175 billion from PEN
  - This can be reallocated for the Program Surya Nusantara – a program that targets the installation of 1.5 kWp of solar rooftop in 800,000 households per year
  - This program could support the government in reducing electricity subsidies up to Rp1.3 trillion every year

Case Study I

Nigeria's National Economic Sustainability Plan

- A US$5.9 billion stimulus package that will last for 12 months focuses on retaining and creating jobs and increasing productivity
- Solar Power Strategy Programme – US$620 million to create 250,000 jobs by providing Solar Home systems and mini-grids to 5 million households that are not connected to the grid
- It also provides monetary incentives for private solar installers and aims to create more domestic jobs in the solar industry

Case Study II

Nigeria's removal of fossil fuel subsidy

- Due to recent drop in oil prices and the need for funds to manage the pandemic
- Subsidies was eliminated through a new price cap but allowed prices to move with the market
- The subsidy removal is expected to save the government US$2 billion a year. The state has given fossil fuel subsidies up to US$3.9 billion in 2020.

Recommendations in the AFOLU sector

2

- Introduce environmental considerations for Indonesia's Food Estate Program
  - Indonesia has allocated Rp7.96 trillion for Food Estate Program to secure domestic food supplies and reduce reliance on imported food crops
  - However, there is concern that this program would reduce protected forest area due to the recent regulation that allows forest area to be converted
  - Indonesia could, for example, require reforestation or reducing agriculture waste as part of the food estate program. Support could be provided for companies to access 'soft loans facility' for the purpose of plantation, such as Malaysia's PPLH program or India's PMKSY scheme where the government collects agricultural waste for benefits to farmers.

Case Study I

India's Pradhan Mantri Kisan Sampada Yojana (PMKSY) Scheme

- A comprehensive package that supports food processing sector, while providing better returns to farmers and reducing wastage of agricultural products
- The government has provided US$780 million for this national scheme to develop an integrated supply cold chain for agricultural products. The scheme maximizes value addition to agricultural supply chain and minimizing waste

Case Study II

Malaysia's Plantation Development Loan (PPLH) programme

- A fund dedicated for the development of forest plantations with a size of 4 hectares and above
- Provide a facility for companies to access loans with 3% interest rate over 20 years loan period
- Eligible for high-value wood-based products to ensure forest sustainability

Recommendations in the industry sector

3

- Introduce environmental considerations for tax incentives for businesses
  - Indonesia has allocated Rp123 trillion of tax incentives for 19 manufacturing sectors in 2020 and another Rp62.8 trillion in 2021
  - This year, the government has continued the program on extending tax incentives for 5 sectors, namely education, healthcare, transportation, accommodation, and construction
  - Environmental requirement could be introduced, for example, by requiring businesses to fulfil the Green Industry Standard (*Standard Industri Hijau*), which applies eco-friendly measures, such as clean production, energy conservation, resource efficiency, and low-carbon technology, to be eligible for tax incentives
  - This should be supported with fiscal incentives mechanism for industries adopting green measures, such as Thailand's tax incentives. Currently, fiscal incentives are still being discussed by Ministry of Industry.
- Require certain criteria for projects eligible for guarantee under PII bailout
  - Indonesia Infrastructure Guarantee (PII) has been allocated Rp1.6 trillion of capital injection in 2020 and set to receive another Rp1.6 trillion in 2022.
  - This bailout could be intended for projects with certain environmental criteria, such as Malaysia's GTFS

Case Study I

Thailand's Measure for Improvement of Production Efficiency

- Thailand Board of Investment has provided fiscal incentives for industries that have implemented energy conservation, alternative energy utilization, or R&D efficiency
- Incentives included are exemption of import duty on machinery, 3-year corporate income tax (CIT) exemption, and CIT exemption period shall start from the date of revenue derivation.

Case Study II

Malaysia's Green Technology Financing Scheme

- Provide guarantee coverage for funding raised via the capital market or loan financing from financial institutions for projects in 6 sectors
- This includes projects that fulfill environmental criteria in energy, building, transportation, natural resources, and circular economy/climate adaptation sectors

Appendix

Summary of positive policy archetypes

Sector	Archetype	Description
Agriculture	Bailouts with green strings attached	Requiring limits to emissions or waste in return for direct funding
	Green infrastructure investments	Direct loans or tax rebates and subsidies, e.g. for high-efficiency water irrigation systems.
	Nature-based solutions	Afforestation and reforestation programmes, restoration of wetlands, or forest management investments.
	Conservation and wildlife protection programs	Making the sale of endangered animals illegal
Energy	Bailouts with green strings attached	Direct loans and guarantees for oil, gas and coal with commitments for improvement on emissions or energy efficiency
	Green infrastructure investments	Direct investment in the form of loans or grants towards renewable energy including solar, wind, biofuels and hydrogen
	Green R&D subsidies	Grants for research institutes, academic institutes, and private firms to develop new renewable energy technologies and systems
	Subsidies or tax reductions for green products	Extending tax rebates to households for rooftop solar, or making green energy products including utility tariffs with renewable targets available at a subsidised cost.
Industry	Bailouts with green strings attached	Conditions on firms relating to emissions, pollution, supply chain requirements, or compliance with voluntary agreements or reporting standards
	Green infrastructure investments	Low carbon or low emissions public infrastructure for industry
	Green R&D subsidies	Direct grants or loans available to research institutions, academic institutions, and private firms to develop low-carbon industrial technologies
	Subsidies or tax reductions for green products	Taxes for the use of primary materials in supply chain, subsidies offered to firms that ensure compliance in their supply chains

Summary of positive policy archetypes

Sector	Archetype	Description
Transport	Bailouts with green strings attached	Conditional bailouts to air carriers, car manufacturers, or shipping for emissions reduction pledges or commitment to use biofuel or renewable fuel standards in exchange for loans
	Green infrastructure investments	Building public infrastructure projects including cycleways, low-carbon rail or other mass transit, public walkways, and railroads with consideration towards climate mitigation and adaptation
	Green R&D subsidies	Loans or research grants available to develop electric vehicles, hydrogen vehicles, and low-carbon fuel alternatives for shipping, aviation and vehicle transport
	Subsidies or tax reductions for green products	Tax rebates available to consumers for EVs, subsidies for low carbon transportation including light rail
Waste	Bailouts with green strings attached	Tying bailouts to commitments to shift from waste incineration to more sustainable waste management strategies
	Green infrastructure investments	Direct investment in recycling, Municipal Solid Waste, waste-to-energy, or methane recapture on existing facilities or new waste management facilities
	Green R&D subsidies	Loans or research grants for the development of advanced waste management include waste-to-energy and methane recapture technologies
	Subsidies or tax reductions for green products	Tax reductions or rebates for recycling, composting including buy-back programs or subsidisation of environmental producer responsibility (EPR) Programs

Summary of negative policy archetypes

Sector	Archetype	Description
Agriculture	Subsidies for environmentally harmful activities	Waiving, reducing, or directly subsidizing fees for point and non-point source pollution in agriculture, logging, and timber. Removal of conservation or preservation laws around forest management and access
	Deregulation of environmental standards	Removing, repealing, increasing the quantity of pollutants allowed or extending the compliance period for pollution, emissions, or land use change in agriculture and forestry sectors
	Environment related bailout without green strings	Loans, guarantees or grants provided to agricultural producers including farmers, fishers and cattle ranchers that do not require improvement in sustainable practices
	Subsidies/tax reductions for environmentally harmful products	Introducing subsidies for high emissions agricultural products including cattle and sheep, reducing existing carbon taxes or environmental taxes on high-impact agriculture and harvested wood products
Energy	Subsidies for environmentally harmful activities	Subsidising utilities, producers, or developers of oil and gas or coal production plants
	Environmentally harmful infrastructure investments	Direct investment in coal or oil and gas sector, or loans, grants and guarantees to build oil and gas or coal production plants
	Deregulation of environmental standards	Removing mandates for environmental reporting or disclosure, suspending enforcement of environmental regulation
	Environment related bailout without green strings	Extending loans, grants, guarantees, or other financing to oil and gas or coal producers without conditions on emissions intensity
	Subsidies/tax reductions for environmentally harmful products	Subsidies for consumers or producers of oil and gas and coal including diesel, home electricity, and utilities and reducing existing fuel taxes or carbon taxes.

Summary of negative policy archetypes

Sector	Archetype	Description
Industry	Subsidies for environmentally harmful activities	Waiving permitting and environmentally-related fees for mining, construction or other heavy industrial sectors
	Environmentally harmful infrastructure investments	Direct government investment in high emissions public infrastructure
	Deregulation of environmental standards	Removal of reporting or mandatory disclosure of environmental impacts by industrial firms, suspension of enforcement of environmental laws and regulations
	Environment related bailout without green strings	Direct unconditional support through grants, loans, guarantees, or other financial mechanisms to high-emissions industrial sectors without requirements
	Subsidies/tax reductions for environmentally harmful products	Reducing taxes on environmentally intensive products including manufactured goods and chemicals which have a high environmental impact
Transport	Subsidies for environmentally harmful activities	Direct subsidisation of combustion engines made available to consumers or producers, removal or reduction of the fees related to tailpipe emissions or fuel taxes
	Environmentally harmful infrastructure investments	Direct government investment into infrastructure supporting polluting transport, such as airports or roads
	Deregulation of environmental standards	Removal of regulations governing the transport sector, such as for ships and aviation and largely relating to emissions
	Environment related bailout without green strings	Direct unconditional support through grants, loans, guarantees, or other financial mechanisms to high emissions transport providers, such as airlines
	Subsidies/tax reductions for environmentally harmful products	Reducing taxes on the sale of high-polluting products such as automobiles

Summary of negative policy archetypes

Sector	Archetype	Description
Waste	Subsidies for environmentally harmful activities	The removal of fees relating to the environmentally harmful disposal or treatment of waste
	Environmentally harmful infrastructure investments	Investments into waste infrastructure that does not improve the environmental impact of waste disposal or treatment.
	Deregulation of environmental standards	Removal of regulations governing the disposal and/or treatment of waste
	Environment related bailout without green strings	Extending bailouts to waste industries which openly incinerate or do not use methane recapture, or other advanced waste management systems without requirements for meeting environmental reporting standards