

Financing the low-carbon transition

Dirk Schoenmaker

RSM, Erasmus University; Bruegel; CEPR; SUERF

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1. Challenge of transition finance
2. Role of (sub)national government and financial sector
3. Financing challenges and new roles for government
4. Recommendations

Transition and finance are separate worlds

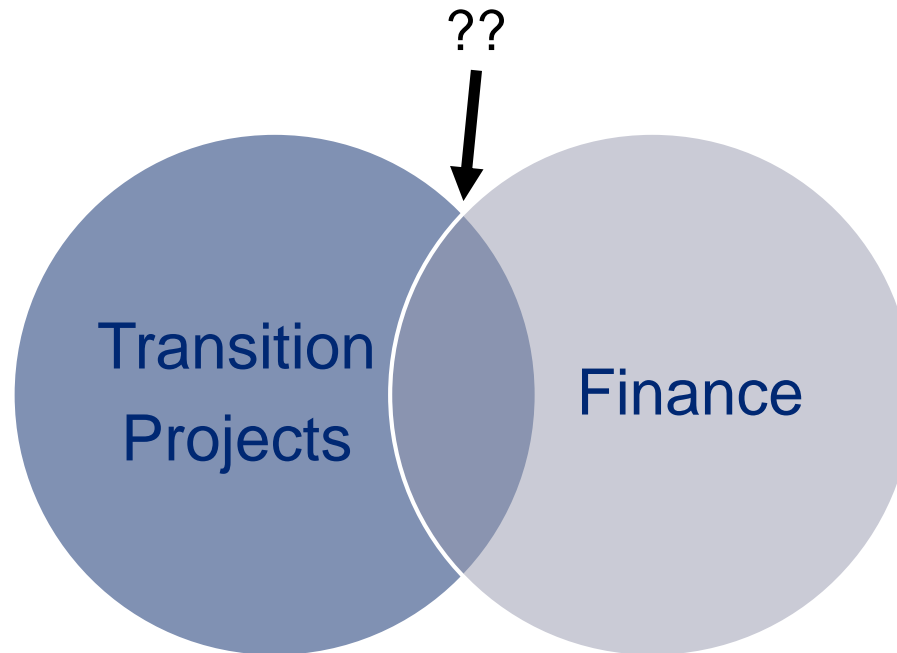


Transition
Projects

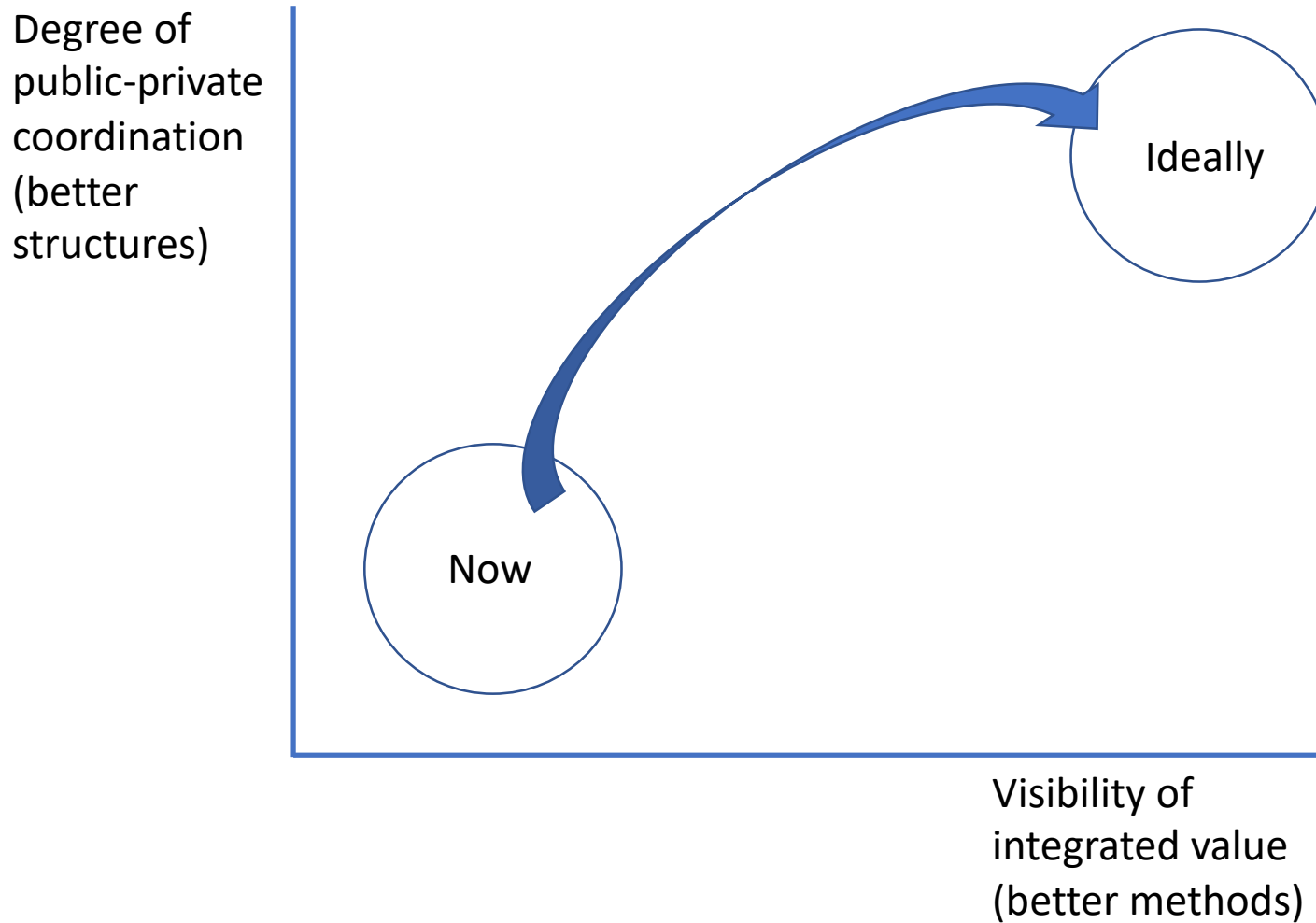


Finance

Bridging transition and finance





Financing challenges

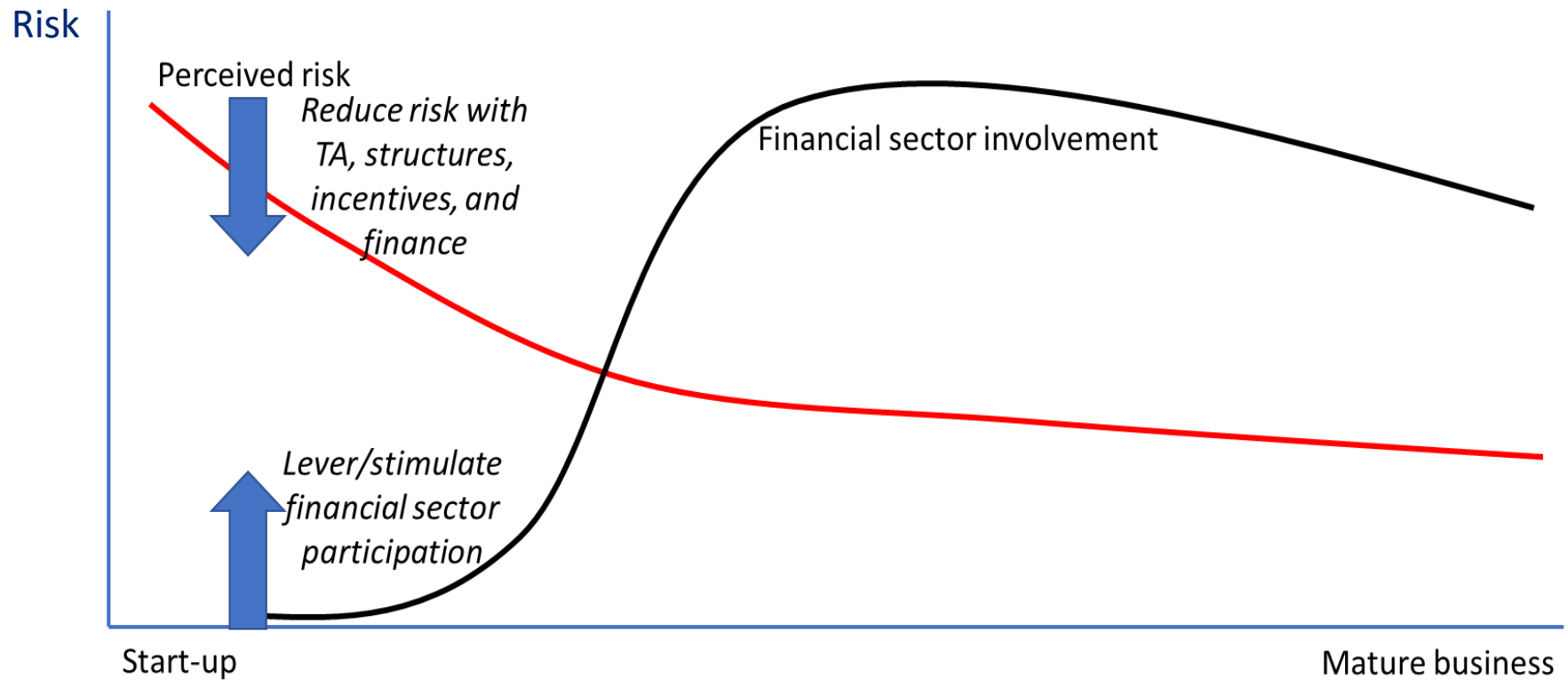


Integrated value (I) = Financial (F) + Social (S) and Environmental (E) value

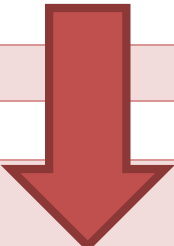
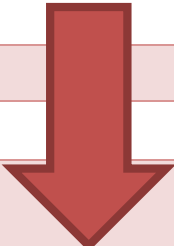
Role in transition stages of new models

Phases of new models	Government role	Financial sector role	Example
1. Experimentation	Can be crucial. Support promising technologies to create powerful options. Provide experimental territories. Invest actively.	Limited, VC finds it too risky, so usually privately funded (entrepreneurs and corporate VC), sometimes publicly, but typically not at all. Emerging use of crowdfunding.	Rotterdam municipal government funds waste to gas facility with 20% success probability.
2. Acceleration	Similar to the above, but investments giving way to financial sector, more focus on other instruments.	VC takes it up.	Proven models are scaled up from low base. Internet companies in 1990s.
3. Emergence	Diminishing role.	Bank and stock market finance become more important.	Wind and solar projects are economical with little or no subsidy.
4. Institutionalisation			Wind and solar projects are economical without subsidy, but question marks remain over peak capacity.
5. Stabilisation			Wind and solar are the default options.

Role of government versus financial sector involvement



Role in transition stages of outdated models

Phases of old models	Government role	Financial sector role	Example
1. Optimisation	Cut subsidies, start pricing externalities, stricter regulation. Offer alternative uses of assets, co-finance under strict conditions.	Higher cost of capital, exclusions, engagement.	Oil companies, airlines.
2. Destabilisation	The above, but stricter Etc.	The above, but stricter. Etc.	Packaged food companies.
3. Disruption			Fossil fuel cars.
4. Breakdown			Coal mining in the West.
5. Phase out			Coal power plants in the West.

Which transitions?

Main transitions

- Energy transition
- Circular economy
- Natural food/land restoration

Literature on government role

- Acemoglu, Aghion, et al (AER, 2012): tax brown and subsidise (R&D) green
- Mazzuchato (2018): government vision and help needed in early stages

Government policies

- Transition is about societal valuation (S+E) and re-employment
- Structures between (subnational) governments and financial sector
- Important role for development banks: EIB as climate bank

What is transition?

Transition from **A** to **B** (via B-thinking)

2-step process

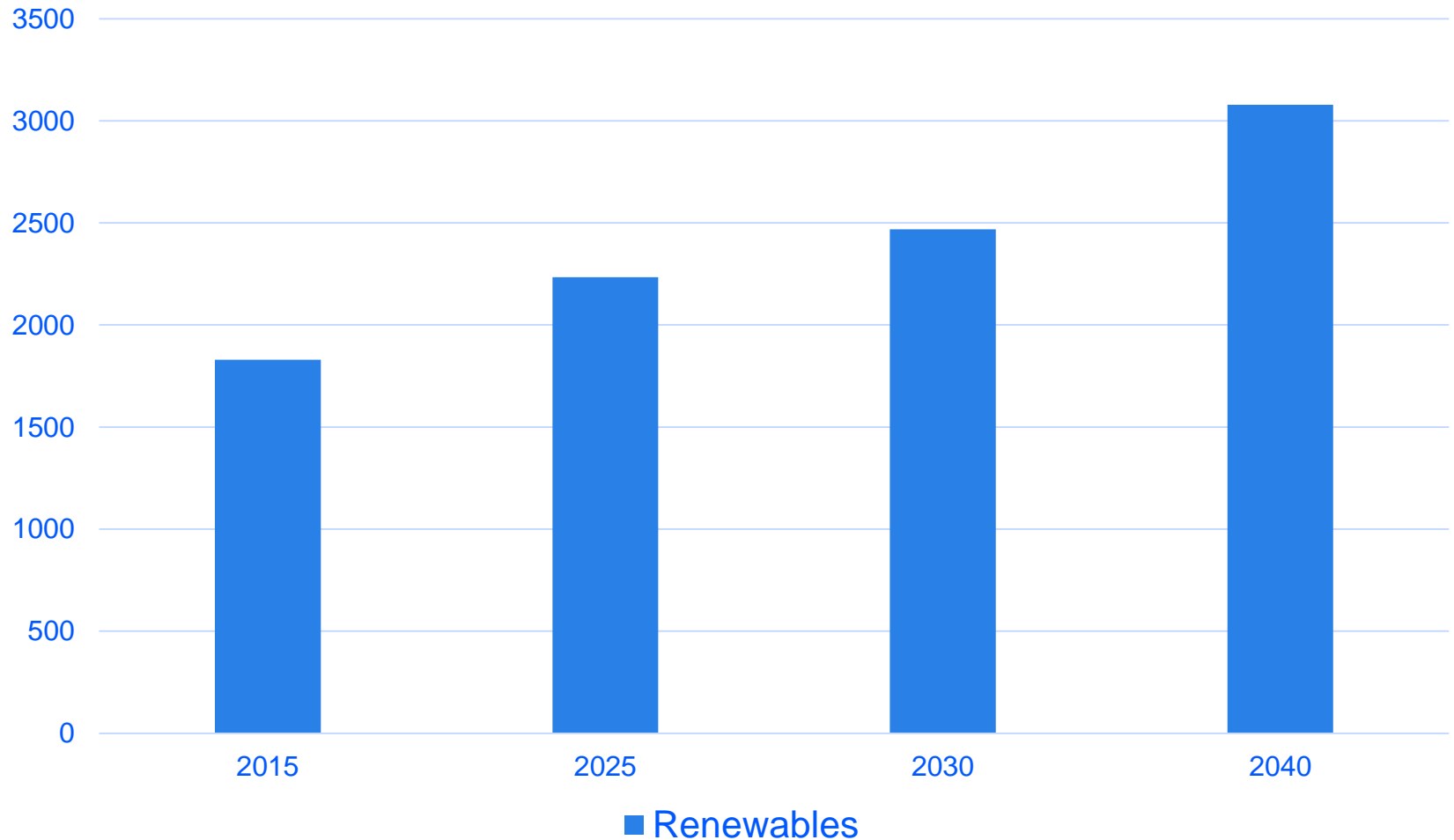
- More **B** (e.g. renewable energy)
- Less **A** (e.g. fossil fuels)

Need for system thinking (e.g. energy system as a whole)

- Partial analysis does not give full picture
- SDGs are a coherent policy agenda

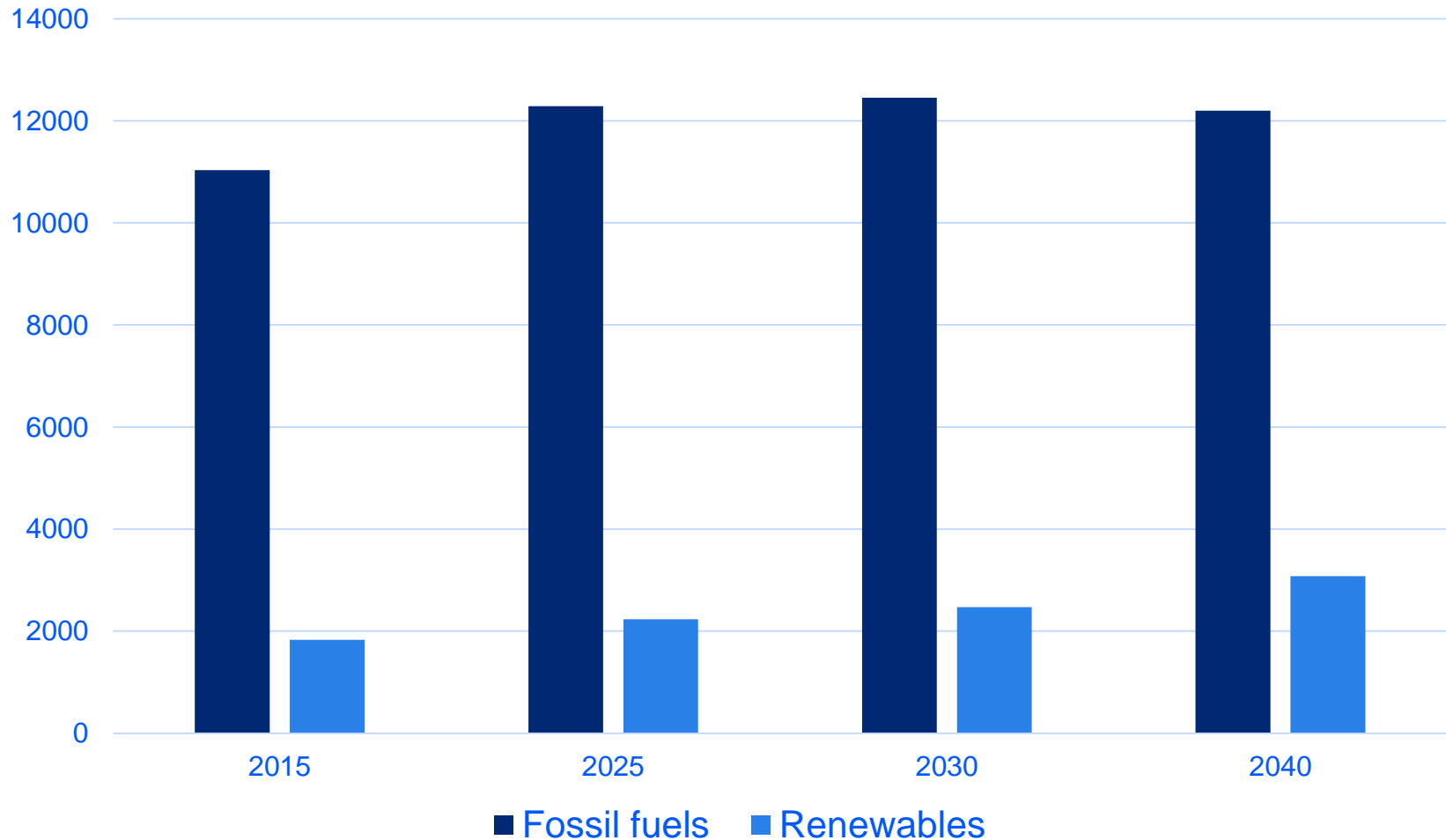
Energy in transition

Primary energy supply (in millions of tonnes of oil equivalent)



Energy in transition, or not?

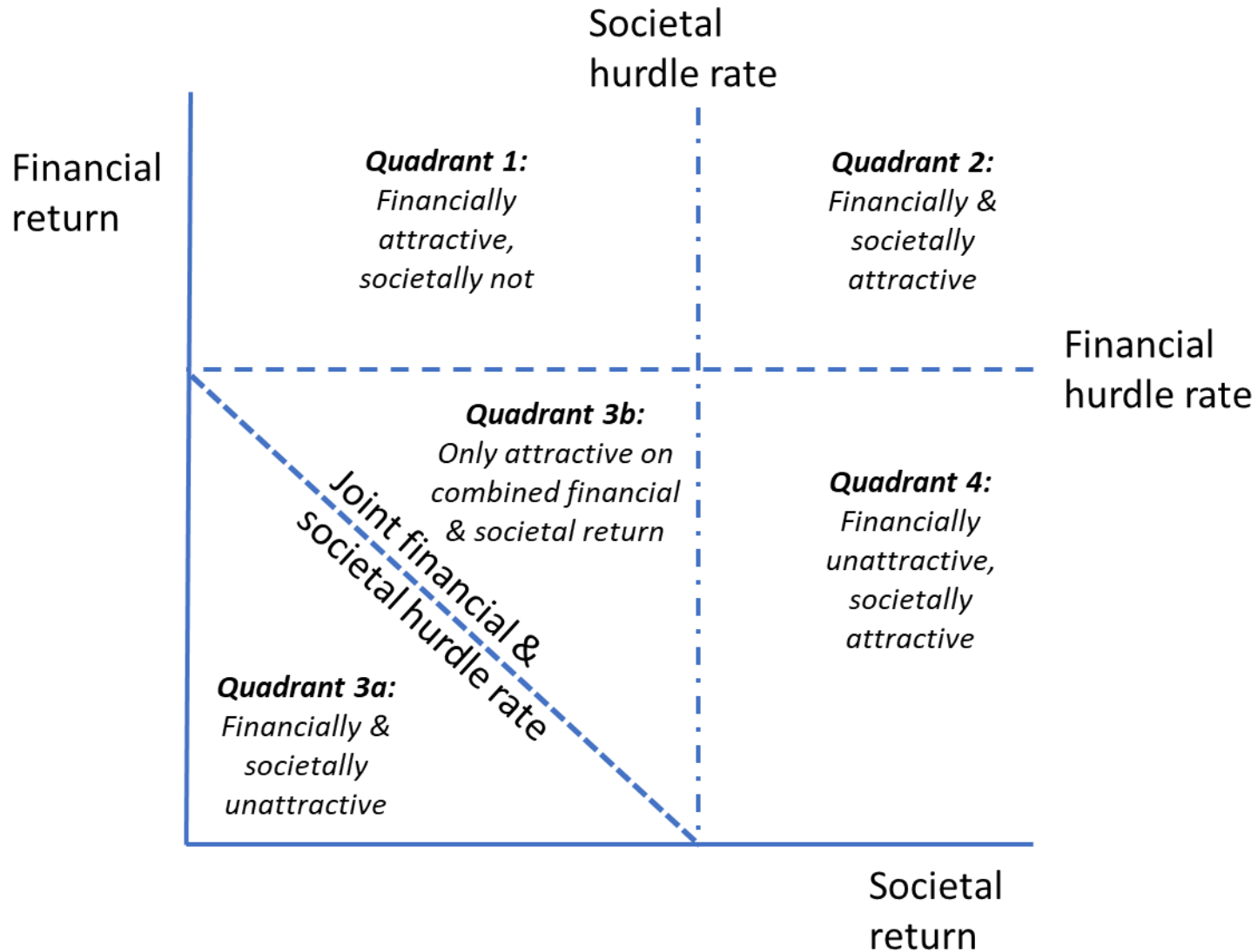
Primary energy supply (in millions of tonnes of oil equivalent)



Indicators to track societal value

Main indicator	
GHG emissions	GHG emissions in power generation % renewables in power mix Growth in power demand GHG emissions in industry GHG emissions in consumption/use GHG emissions in imports Emission reductions innovations Carbon absorption of land Etc.
Materials use & circularity	Value loss in materials Recycling rates Circular jobs Size of the circular economy Use of toxic materials Use of critical materials Waste generated % waste incinerated
Natural capital	Water consumption Green areas Ecosystem value Land restoration Soil quality

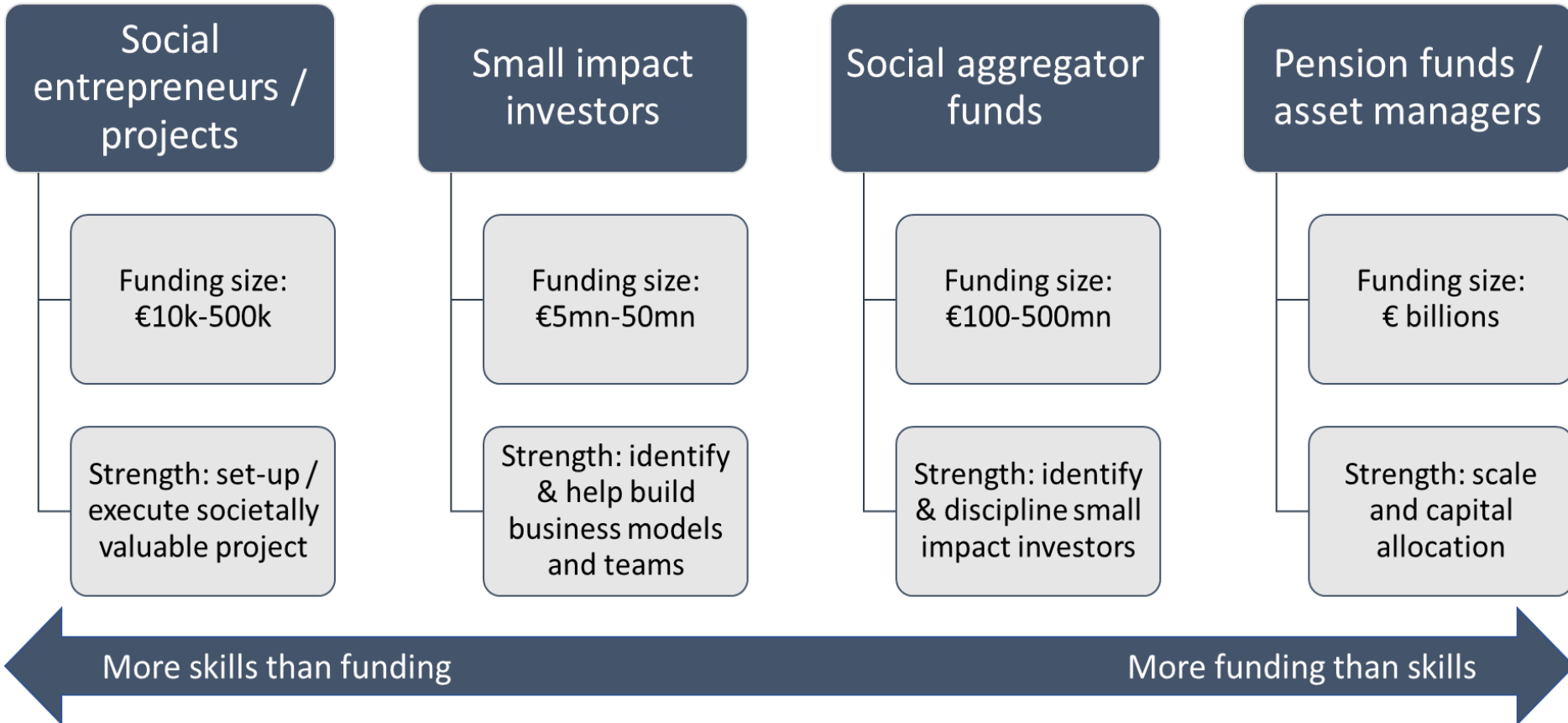
Financial and societal return



National versus subnational actors

<i>Level</i>	Administration	Financial & corporate sectors	Civil society	<i>Advantages</i>
<i>(Inter)national</i>	<ul style="list-style-type: none"> • Supranational bodies • National government • Regulators 	<ul style="list-style-type: none"> • MNCs • Banks • Insurers • Asset managers • Pension funds 	<ul style="list-style-type: none"> • NGOs • Academia • Media 	<ul style="list-style-type: none"> • <i>Scale</i> • <i>Financial means</i> • <i>Visibility</i> • <i>General solutions</i>
<p><i>Information problems</i></p>				
<i>Subnational</i>	<ul style="list-style-type: none"> • City • Province 	<ul style="list-style-type: none"> • Bank branches • SMEs • Local subsidiaries of MNCs 	<ul style="list-style-type: none"> • Local foundations • Active citizens 	<ul style="list-style-type: none"> • <i>Proximity</i> • <i>Direct participation</i> • <i>Local knowledge</i> • <i>Context-tailored solutions</i>

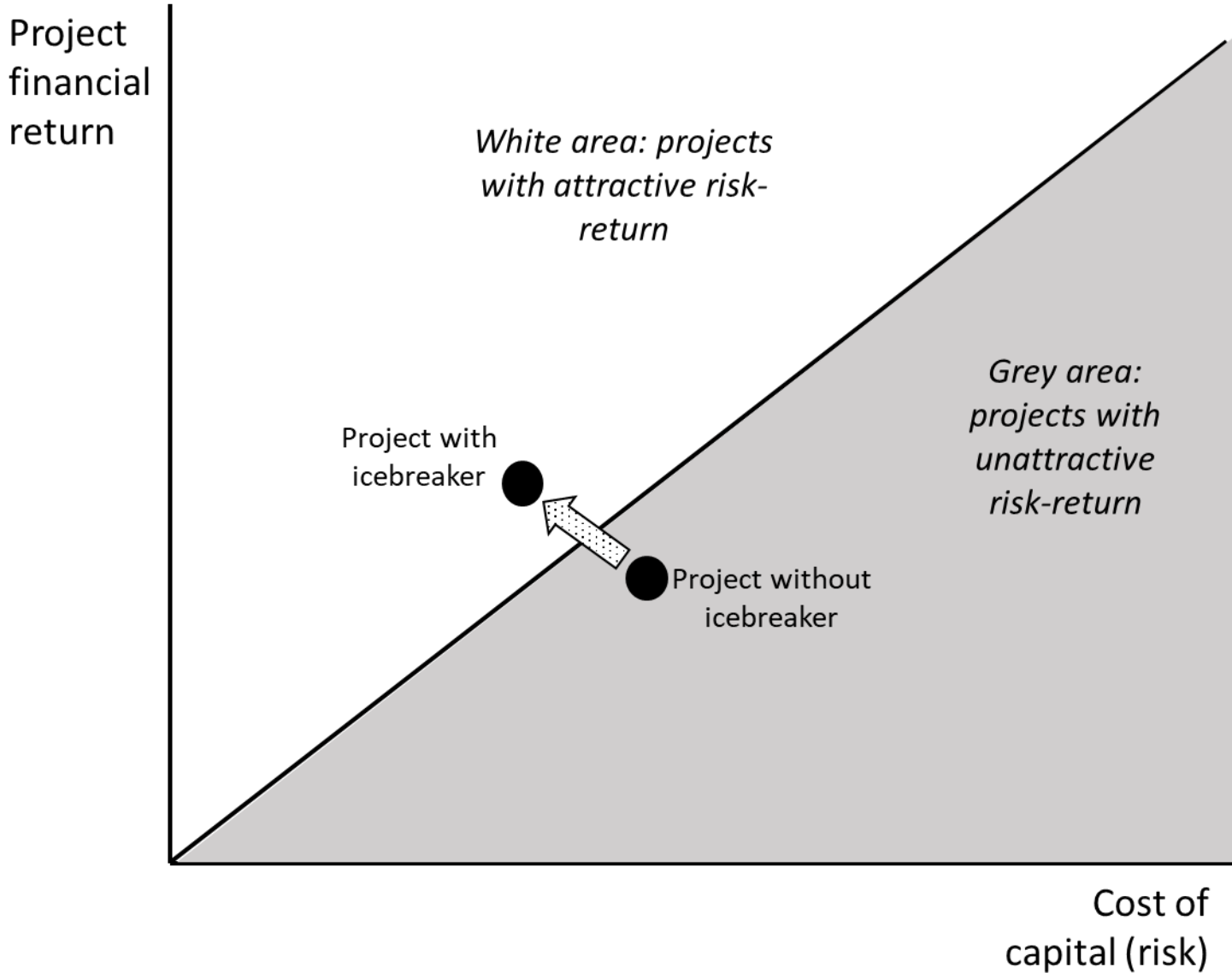
Bridging the gap between projects and large financial institutions



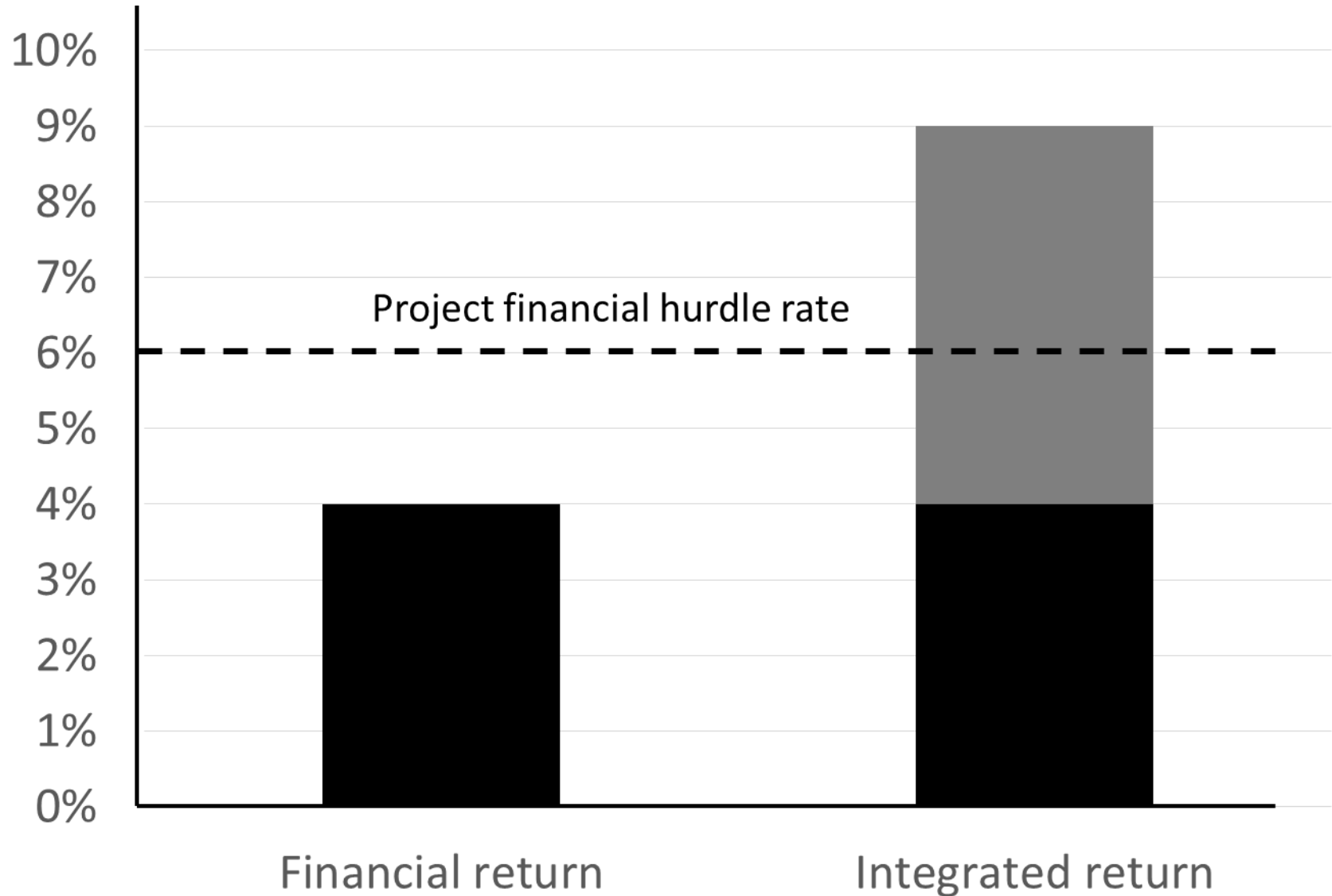
Icebreaker model of blended finance

Type of investor	Type of capital provided	Type of return
Financial investors: <ul style="list-style-type: none">• Institutions• HNWIs• Development Finance Institutions	Debt	Income on assets
	Equity	
Social investors: <ul style="list-style-type: none">• Foundations• Donors• Coop. agencies	Grants	Non-financial return
	Technical assistance	

Icebreaker's impact on the ability to fund



Project's financial vs integrated return



#1: Subnational governments should set clear transition goals with specific indicators' targets (e.g. reduction by half of the number of cars in the city) tuned to their geographic circumstances. That can be at city or regional level or both.

#2: Subnational governments should play an initiating and coordinating role in financing transition projects. This in turn requires that they know very well what to do in which situations.

#3: Subnational governments should identify and assess both the financial and societal potential of projects, and adjust their roles and structures accordingly.

- Subnational governments must develop financial and coordination capabilities to execute #2 & #3.

- National governments have deep pockets and regulatory powers to lead sustainability transition, but many transition projects take place at the local level

#4: National governments should set the adequate framework conditions and collaborate with local governments so as to allow them to follow recommendations 1, 2 and 3.

- Financial sector has the means to (co-)finance the transition. It should develop structures to foster financing transition projects.

#5: Set up and stimulate new societal aggregator funds to bundle small projects. Asset owners can then invest in those societal aggregator funds at low information costs.

#6: Introduce societal impact projects as a new type of alternative asset class. Asset owners and managers can then invest in this asset class. To report on this, integrated value assessments are needed.

#7: Report on integrated value and ask your investee companies to do so as well. With its 2018 impact report, ABN AMRO shows this can be done.

- New societal national accounts at country level and integrated reports at company level are emerging, and very necessary for efficient information sharing (on S and E), but standards are lacking and needed.

#8: International organisations, such as the OECD and the World Bank, should lead the development and coordination of accounting methods for integrated accounts at national and company level. Integrated accounts ensure consistent accounting methods for economic, social and environmental values.

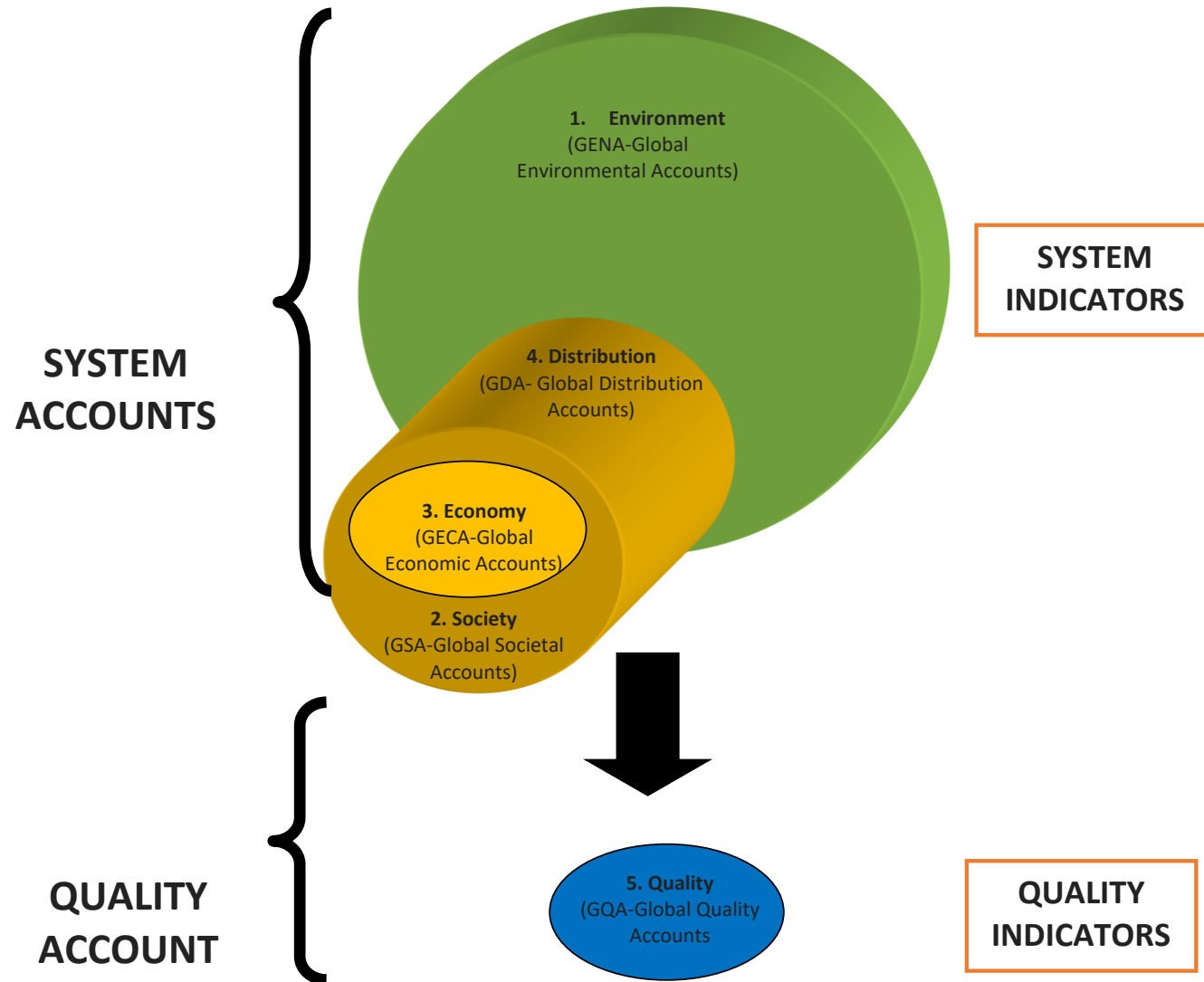
- Company accounts and national accounts should be aligned
- Conventional accounts are aligned: profits of all companies is value added private sector in GDP
- New accounts: not only financial (profit, GDP), but also social and environmental dimension (integrated profit, beyond GDP)
- When new integrated company and national accounts are aligned, integrated thinking will be fostered throughout the economy (at all levels)
- Example carbon accounting at next slides

Company accounts (example of Philips)

Operational carbon footprint by scope (in kilotonnes CO₂-equivalent)

	2013	2014	2015	2016	2017
Scope 1	44	40	39	42	38
Scope 2	114	109	106	121	58
Scope 3	654	594	612	658	751
Total (scope 1 to 3)	812	743	757	821	847
Emissions compensated by carbon offset projects	0	0	0	0	220
Net operational carbon emissions	812	743	757	821	627

System of global and national accounts



Stock/flow accounts of carbon cycle

		Stock 1750	Flows		Stock Present
		Opening stock	Additions	Reductions	Closing stock
Geosphere	Fossil fuels	1471	0	365	1106
	Soils	1950	0	0	1950
	Permafrost	1700	0	0	1700
Biosphere	Marine Biota	3	0	0	3
	Vegetation	550	0	30	520
Atmosphere		589	240	0	829
Hydrosphere	Surface ocean	900	0	0	900
	Intermediate and deep sea	37100	155	0	37255
	Dissolved organic carbon	700	0	0	700
	Ocean Floor	1750	0	0	1750
Total		46713	395	395	46713

Stock/flow accounts of carbon cycle

