



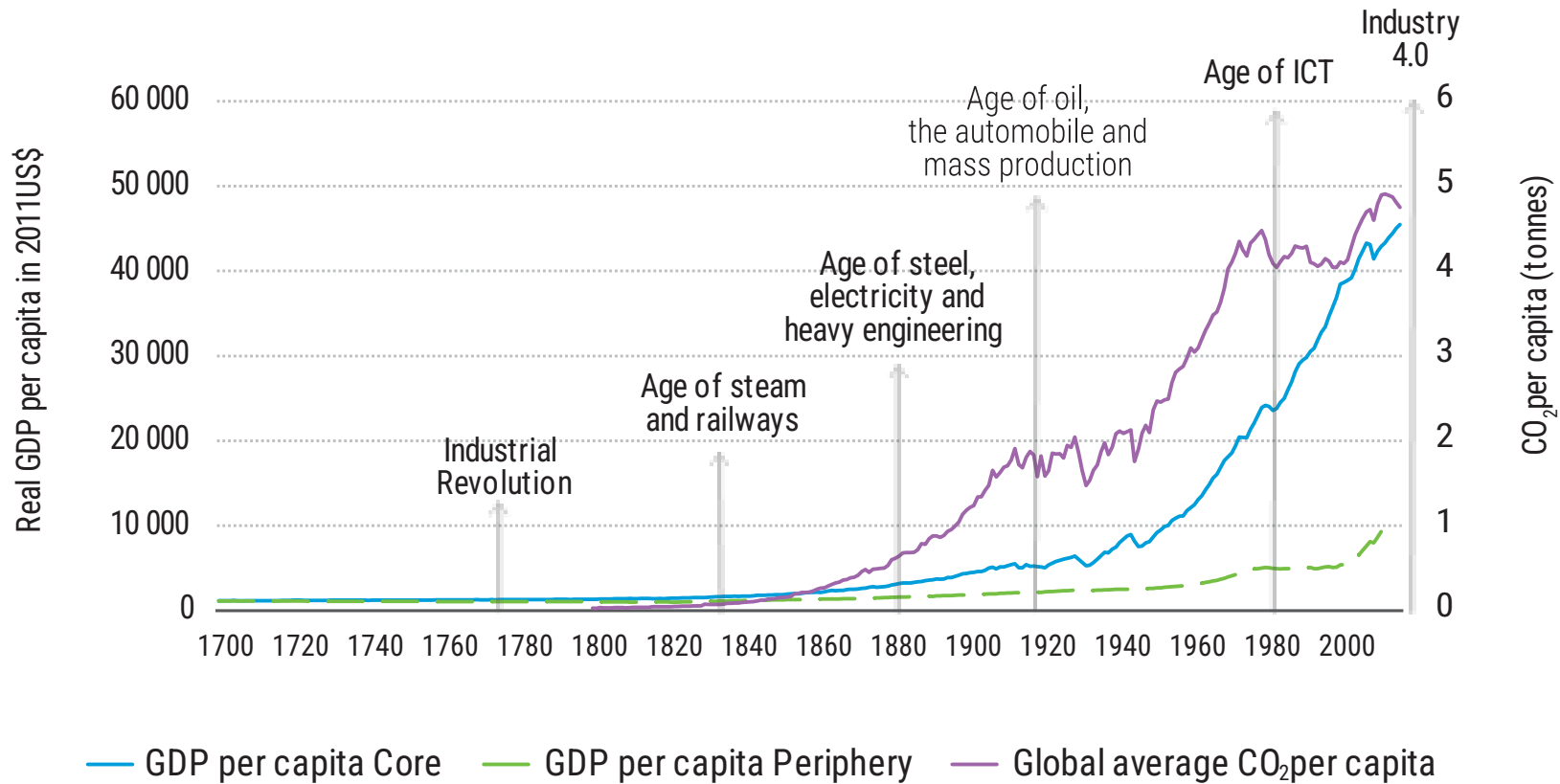
TECHNOLOGY AND INNOVATION REPORT 2023

Opening green windows
*Technological opportunities
for a low-carbon world*



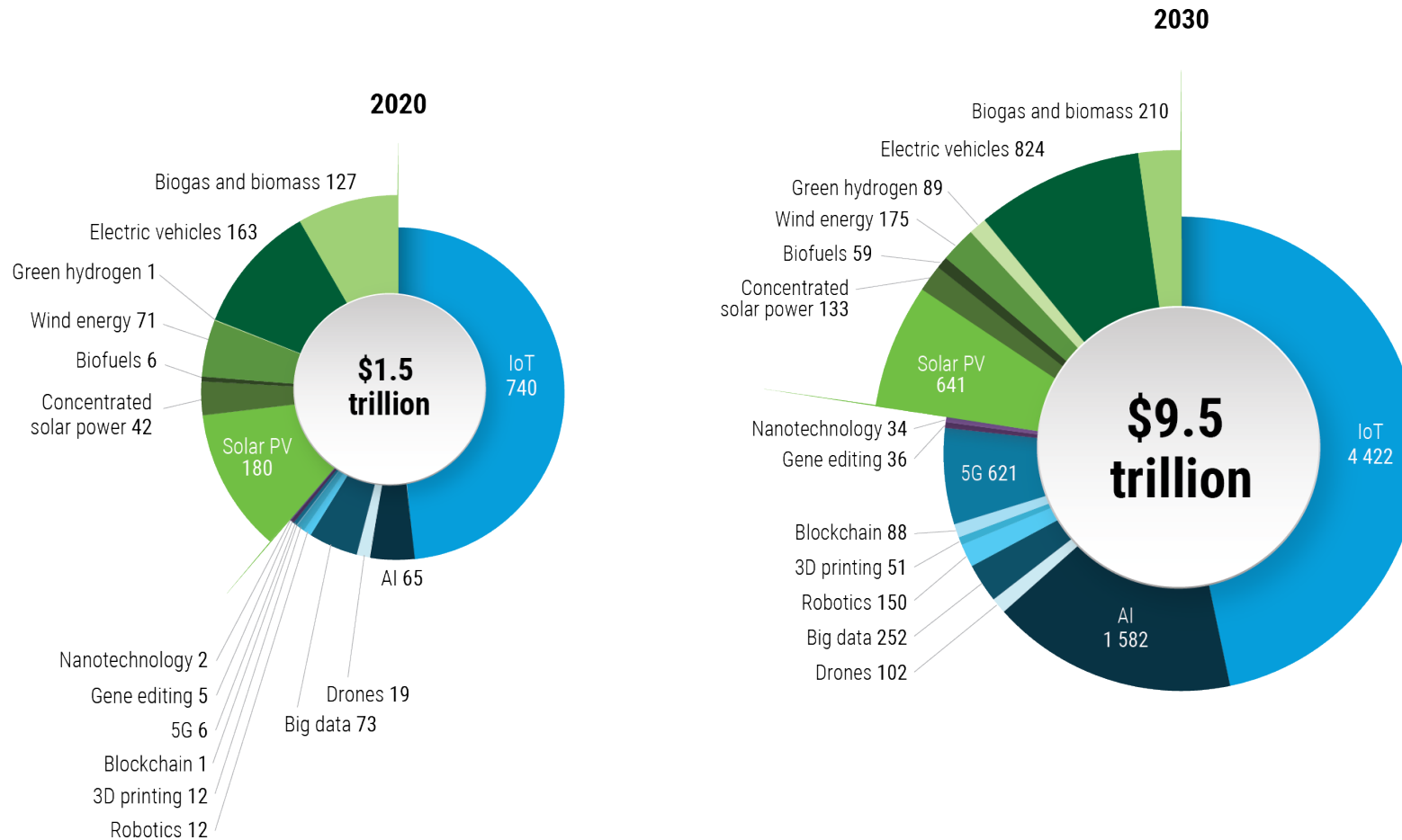
Developing countries must catch the green technological revolution early

The great divide, rise in CO₂ per capita, and waves of technological change

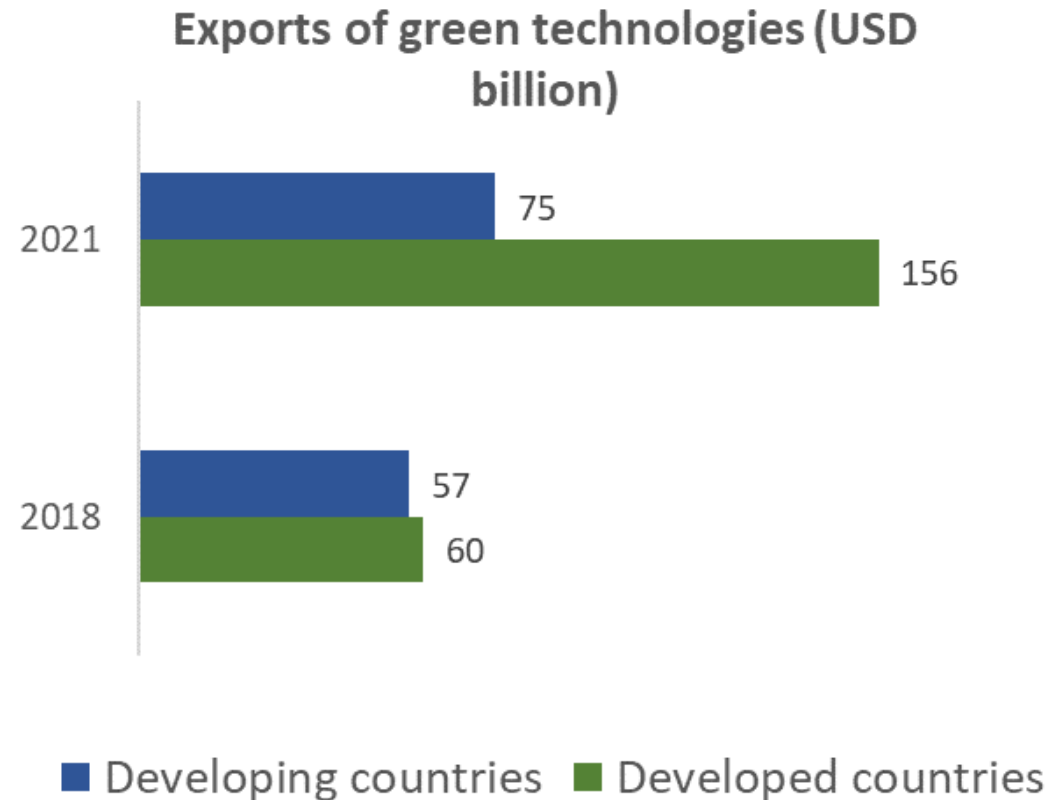


There are enormous opportunities in the development of green frontier technologies

Market size estimates of frontier technologies, \$ billion



But so far, developed economies are seizing most of the opportunities



Readiness index combining ICT, skills, R&D, industrial capacity and finance indicators

	Rank in 2022	Rank in 2021	Movement in rank	ICT ranking	Skills ranking	R&D ranking	Industry ranking	Finance ranking
Top 10								
United States of America	1	1	—	11	18	2	16	2
Sweden	2	4	▲	6	2	16	11	18
Singapore	3	5	▲	7	8	17	4	17
Switzerland	4	2	▼	21	13	12	5	5
Netherlands	5	6	▲	4	9	15	10	31
Republic of Korea	6	7	▲	15	26	3	9	7
Germany	7	9	▲	24	17	5	12	40
Finland	8	17	▲	22	5	21	20	30
China, Hong Kong SAR	9	15	▲	9	23	29	2	1
Belgium	10	11	▲	13	4	23	19	48
Selected transition and developing economies								
Russian Federation	31	27	▼	43	32	13	54	69
China	35	25	▼	117	92	1	8	4
Brazil	40	41	▲	50	55	18	51	57
India	46	43	▼	95	109	4	22	75
South Africa	56	54	▼	71	77	36	67	25

Paths to seize benefits from the green technological revolution

1

Developing and using
renewable energy
technologies

2

Greening traditional
global value chains
by switching to digital
technologies

3

Diversifying towards
production sectors
that are more
complex and greener

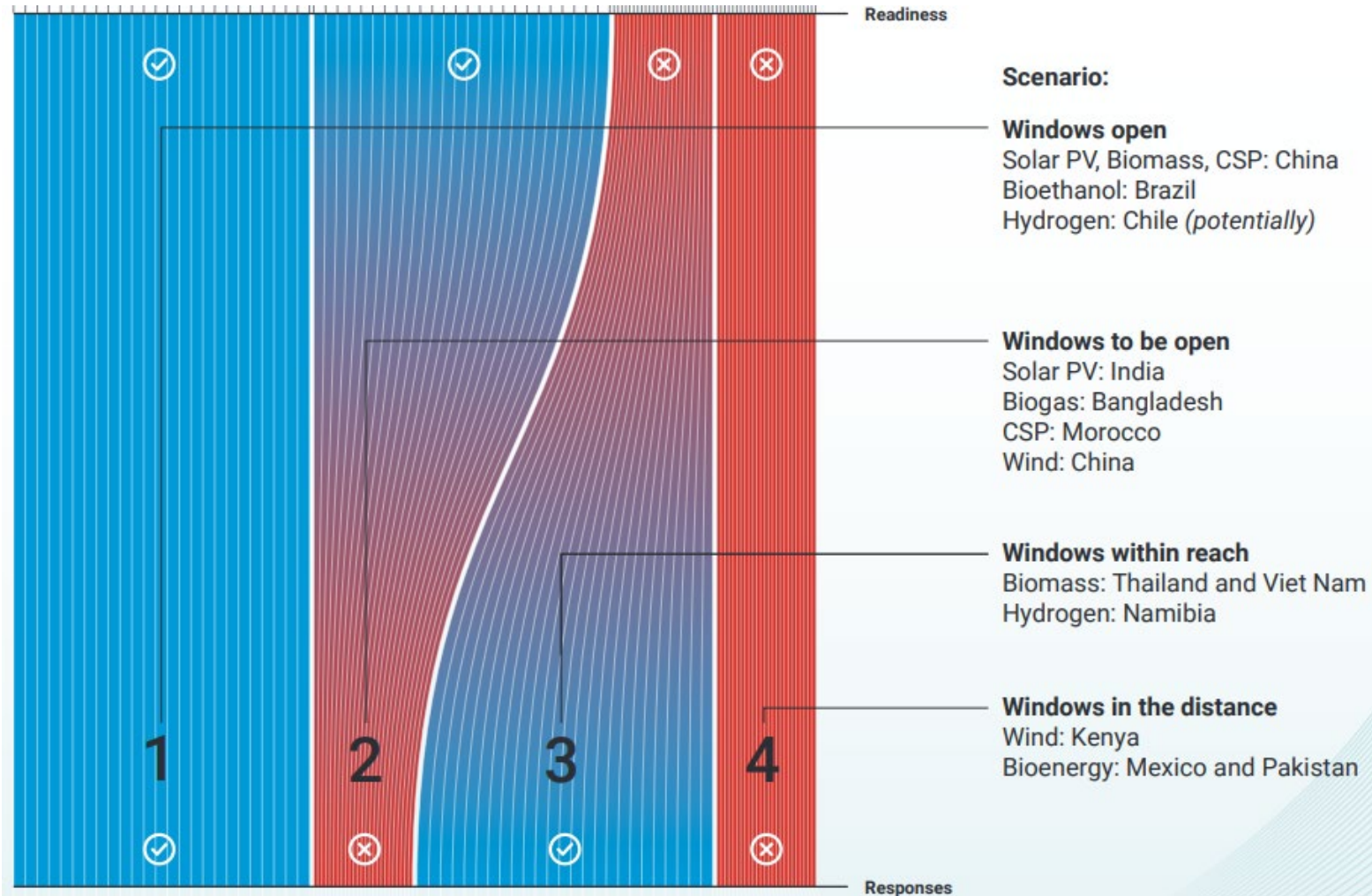
1

Developing and using
renewable energy
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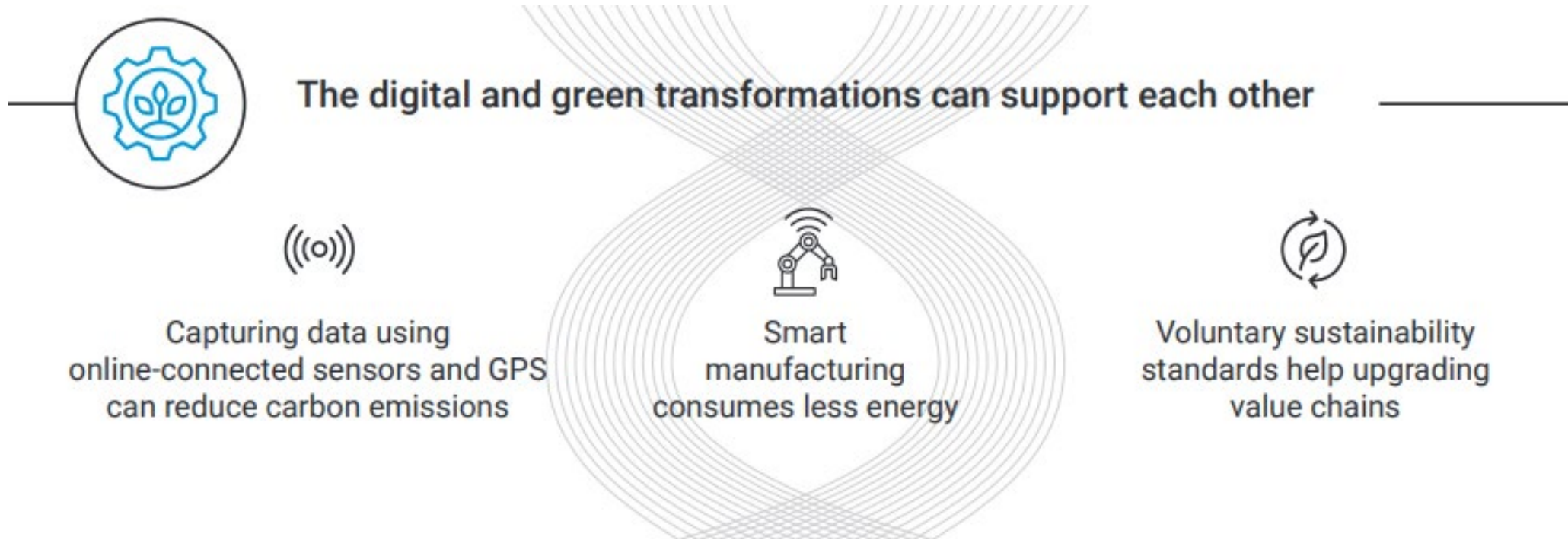
OPENING GREEN WINDOWS

Technological opportunities for a low-carbon world

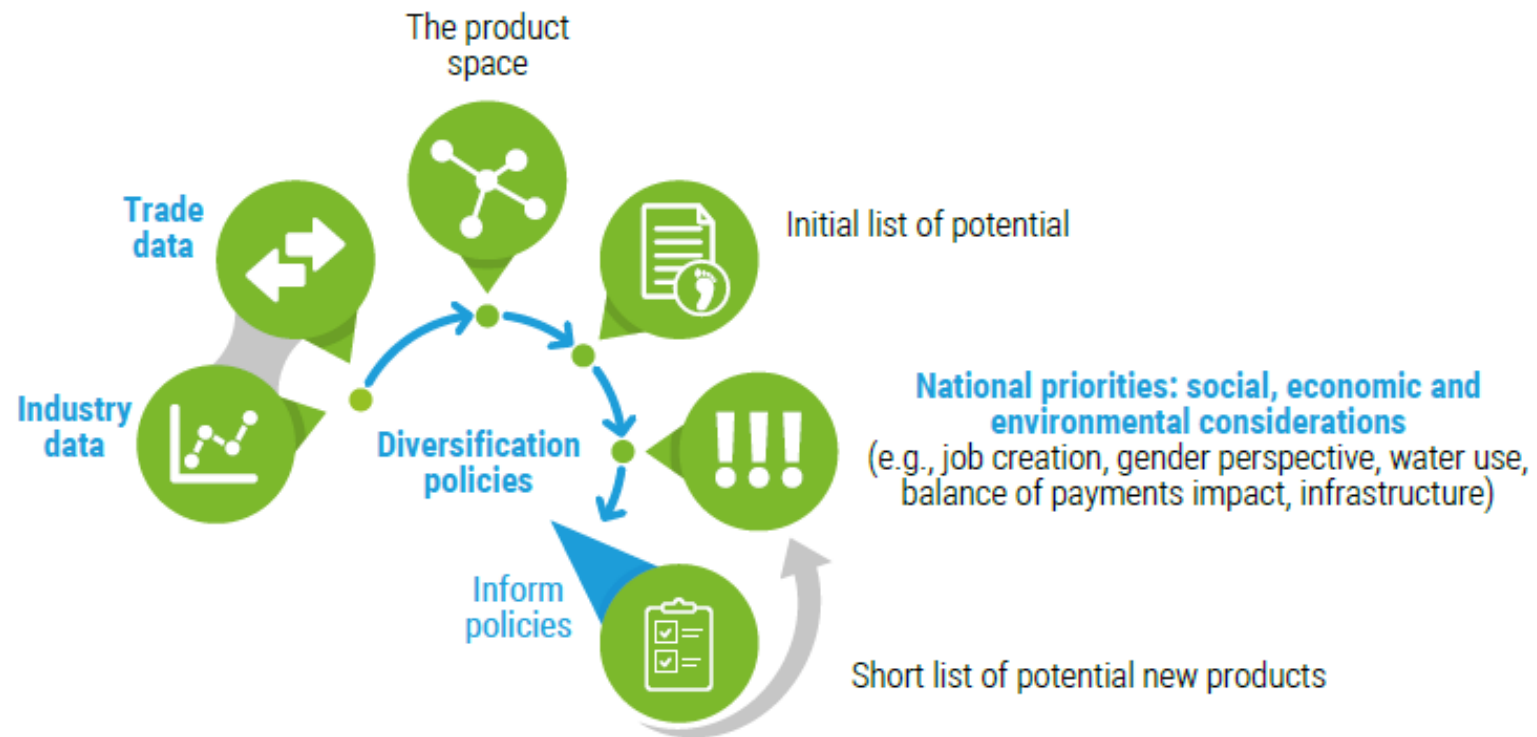
Combining strong initial conditions and strong responses make up the best scenario but weak conditions can be compensated by strong efforts



The digital and the green transformations can be twins if there are strong enough policy responses



Identifying and prioritizing sectors that more complex and greener



Source: UNCTAD.



Set the direction towards green technologies and innovation

International cooperation

Cooperation through international trade

Greater flexibility in the international intellectual property rights system

Partners for green technology

Multilateral and open innovation

Assessing technologies

Regional and South-South cooperation in science, technology and Innovation

Conclusion

Technologies already exist

Political will needed

Developing countries should catch the green technological revolution early

Thank you!



UNITED NATIONS
UNCTAD