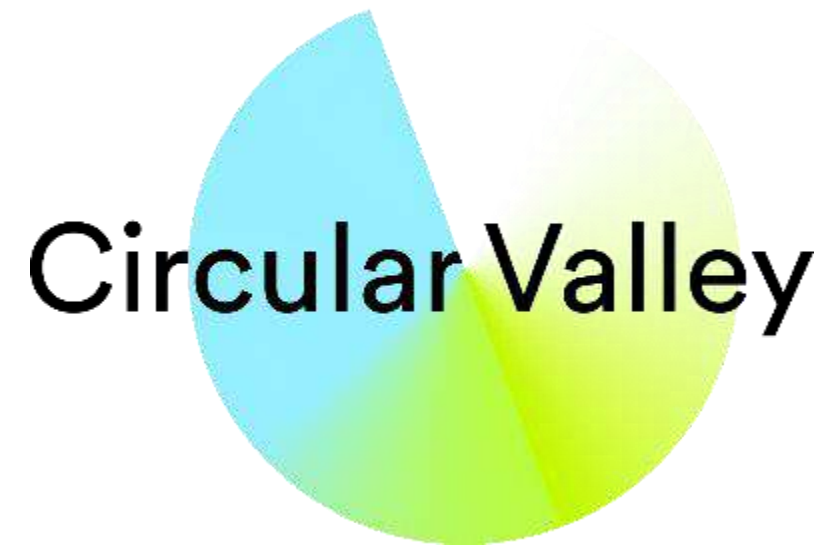




Unlocking Business Opportunities in Europe's Circular Economy through the NRW Ecosystem

Dr. Carsten Gerhardt

June 25th, 2026

**WHY DO JAPAN AND GERMANY
NEED A CIRCULAR ECONOMY?**

opinion

Opinion Desk: opinion@japantimes.co.jp

the japan times

Established 1897
Incorporating The Japan Advertiser 1890-1940
The Japan Chronicle 1868-1940
The Japan Mail 1870-1918
The Japan Times 1865-1870

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China shock 2.0 is a real worldwide economic earthquake

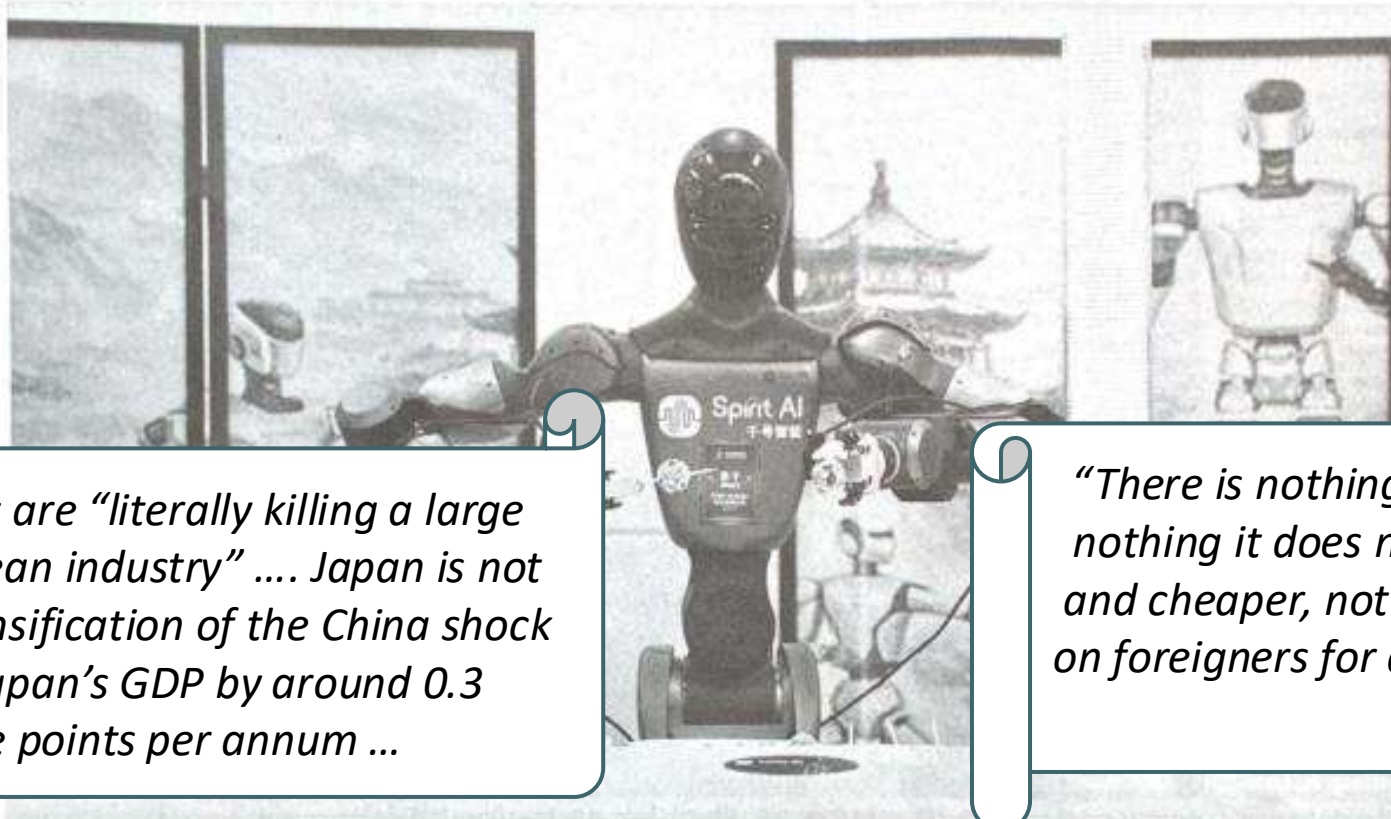
The Asian giant's tech ambitions reshape global competition

Brad Glosserman



Ten years ago, economists Gordon Hanson, David Autor and David Dorn identified what they called "the China shock." That referred to the supercharged economic growth in China triggered by its entry into the World Trade Organization in 2001 and the consequent flood of Chinese exports into the U.S. and other developed nations.

...Chinese exports are "literally killing a large part of the European industry" Japan is not exempt ... the intensification of the China shock could reduce Japan's GDP by around 0.3 percentage points per annum ...



exports as domestic stimulus for the economy remains weak.

Writing in The New York Times last year, Hanson and Autor argued that China shock 2.0 represents an important shift in Chinese exports. Having established itself as a manufacturing power, accounting for 16% of global exports, the world's leader, it is now focused on "key technologies of the 21st century ... aggressively contesting the innovative sectors where the U.S. has long been the unquestioned leader: aviation, artificial intelligence, telecommunications, microprocessors, robotics, nuclear and fusion power, quantum computing, biotech and pharma, solar, batteries."

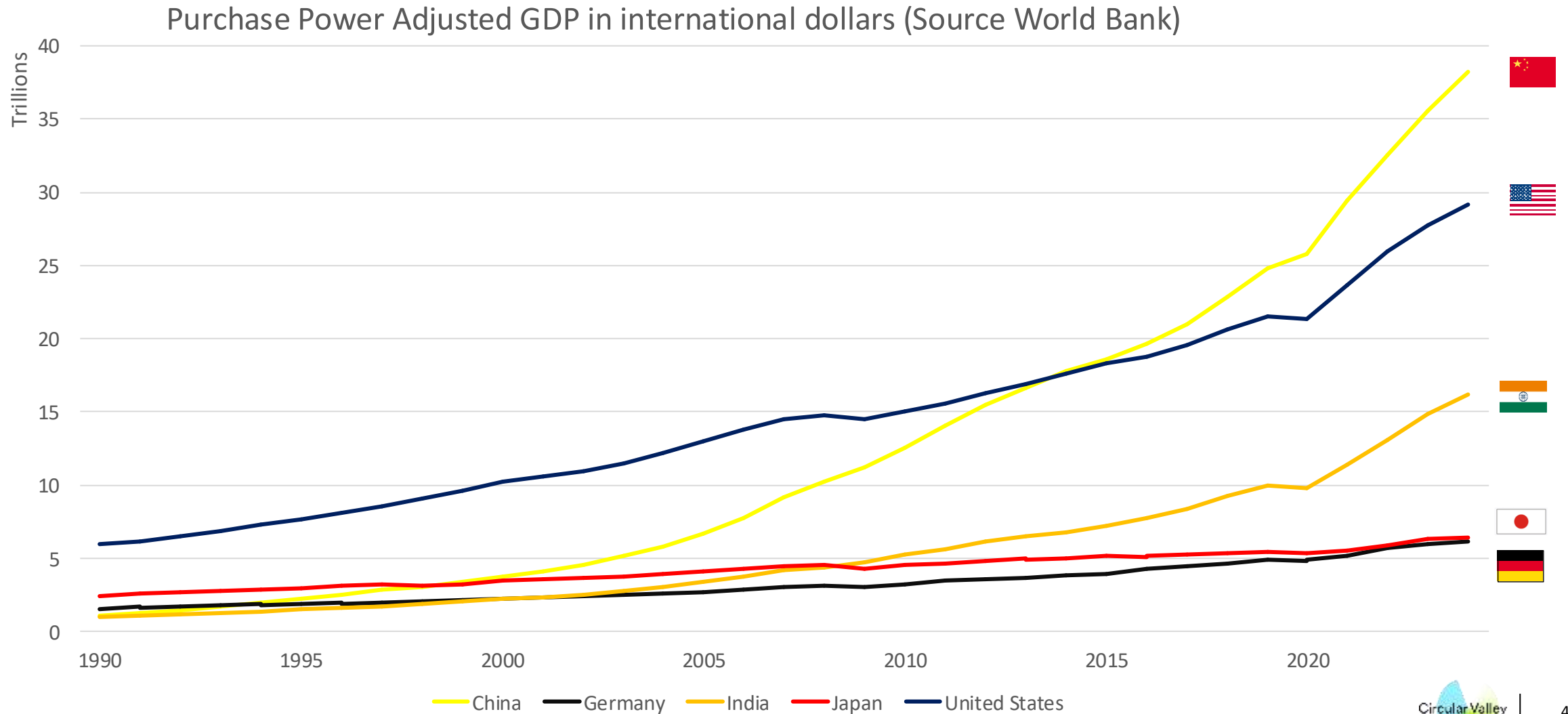
China experts at RAND concurred.

"There is nothing that China wants to import, nothing it does not believe it can make better and cheaper, nothing on which it wants to rely on foreigners for a single day longer than it has to."

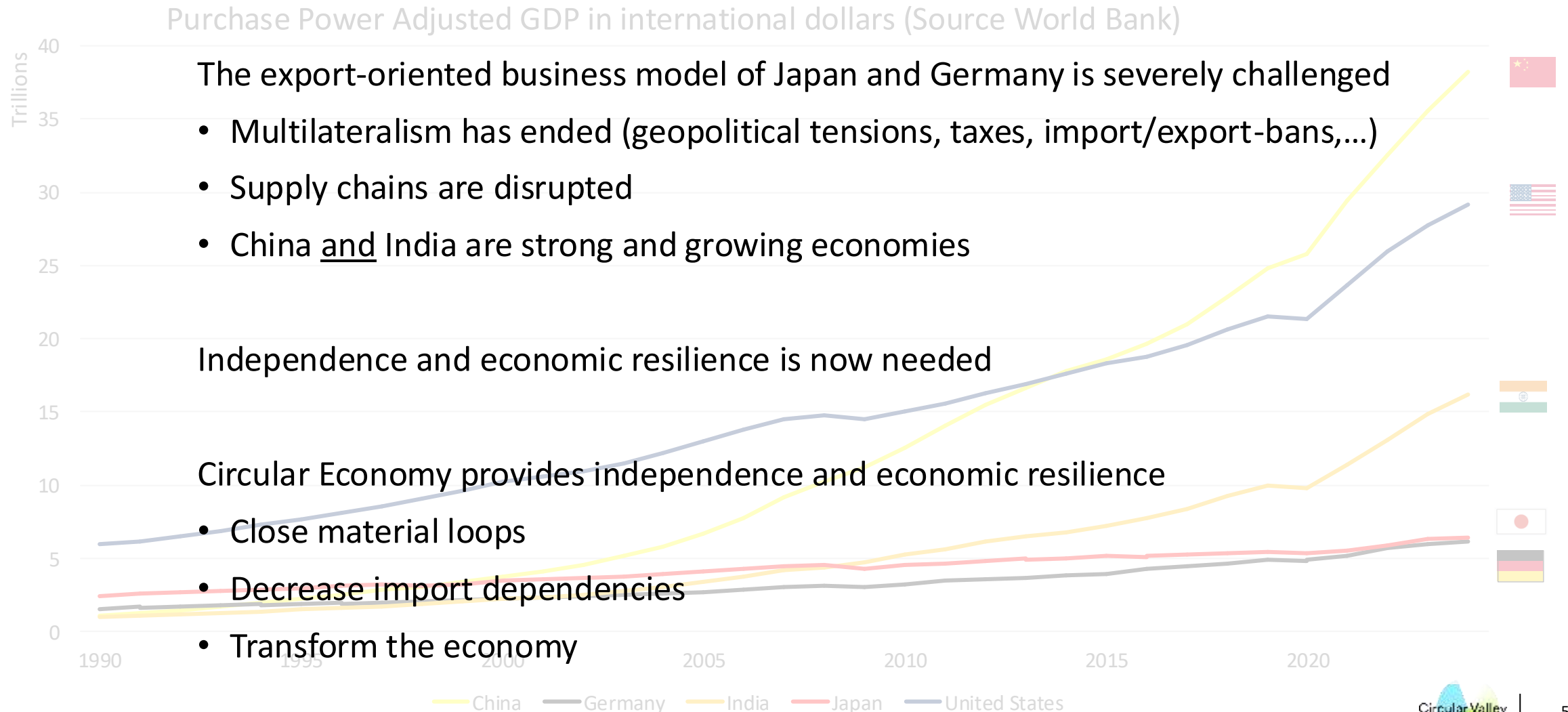
Beijing on March 25,
REUTERS

the traditional approach, which is not, they call for cooperative, collective action among like-minded nations. They embrace an industrial policy that aggressively promotes innovation and entrepreneurship.

GLOBAL ECONOMIC POWERS HAVE CHANGED MASSIVELY OVER THE PAST DECADES



JAPAN AND GERMANY FACE SIMILAR CHALLENGES AND HAVE SIMILAR OPPORTUNITIES FROM A CIRCULAR ECONOMY



PLUS, THE DETRIMENTAL ENVIRONMENTAL IMPACT OF THE LINEAR ECONOMY CAN BE REDUCED



100.000.000.000 tons of emissions/waste annually per year

Huge environmental challenge

On average approximately 35 kg per day and person¹⁾

Increasing with number of consumers

Microplastics in the food chain

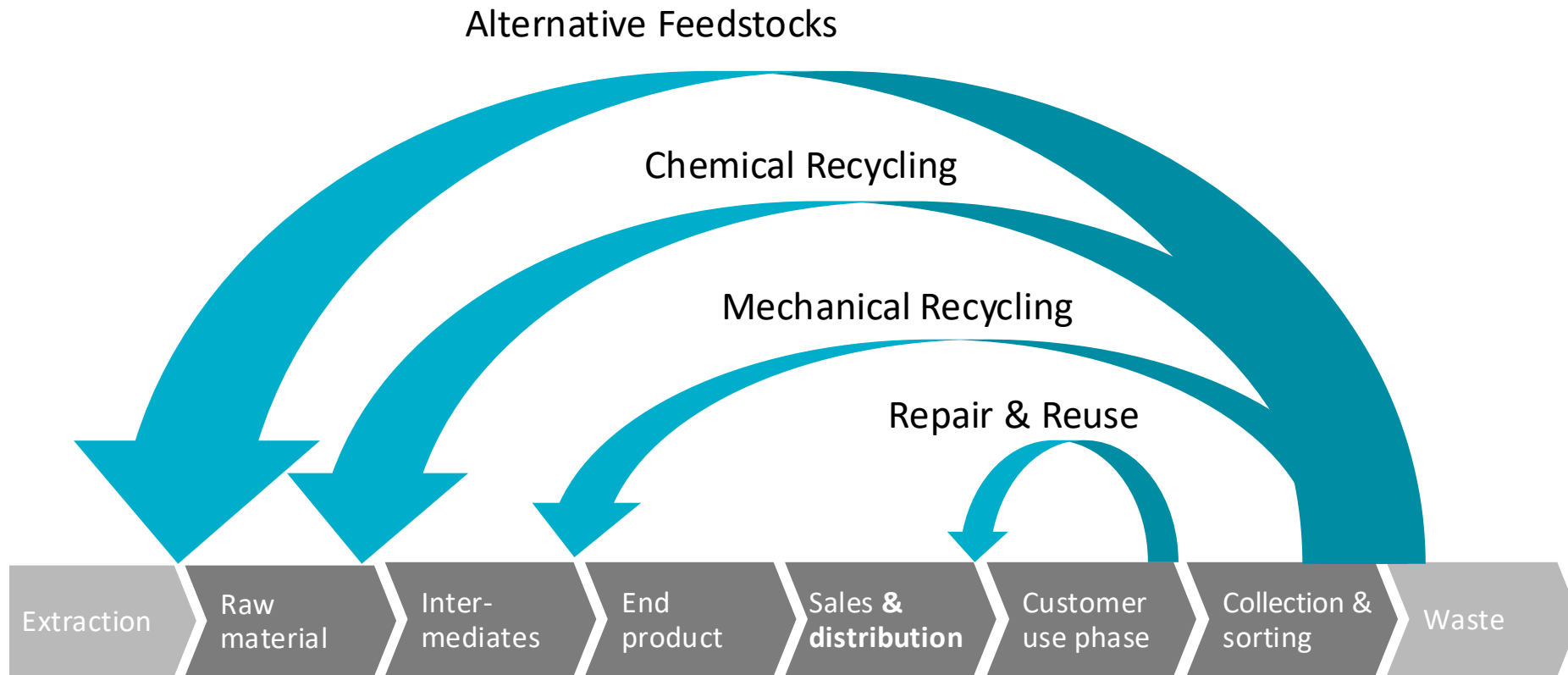
1) incl. CO₂, construction waste, production waste, municipal waste,...

WE HAVE OPTIMIZED A LINEAR ECONOMY AND NOW NEED COLLABORATION TO CREATE A CIRCULAR ECONOMY

“The greatest improvement in the productive powers of labour, ..., seem to have been the effects of the division of labour.” Adam Smith, 1776 – The Wealth of Nations



THERE ARE SEVERAL WAYS TO AVOID HARMFUL EMISSIONS INTO THE ENVIRONMENT



+ Design for Circularity

+ Business models based on using instead of owning

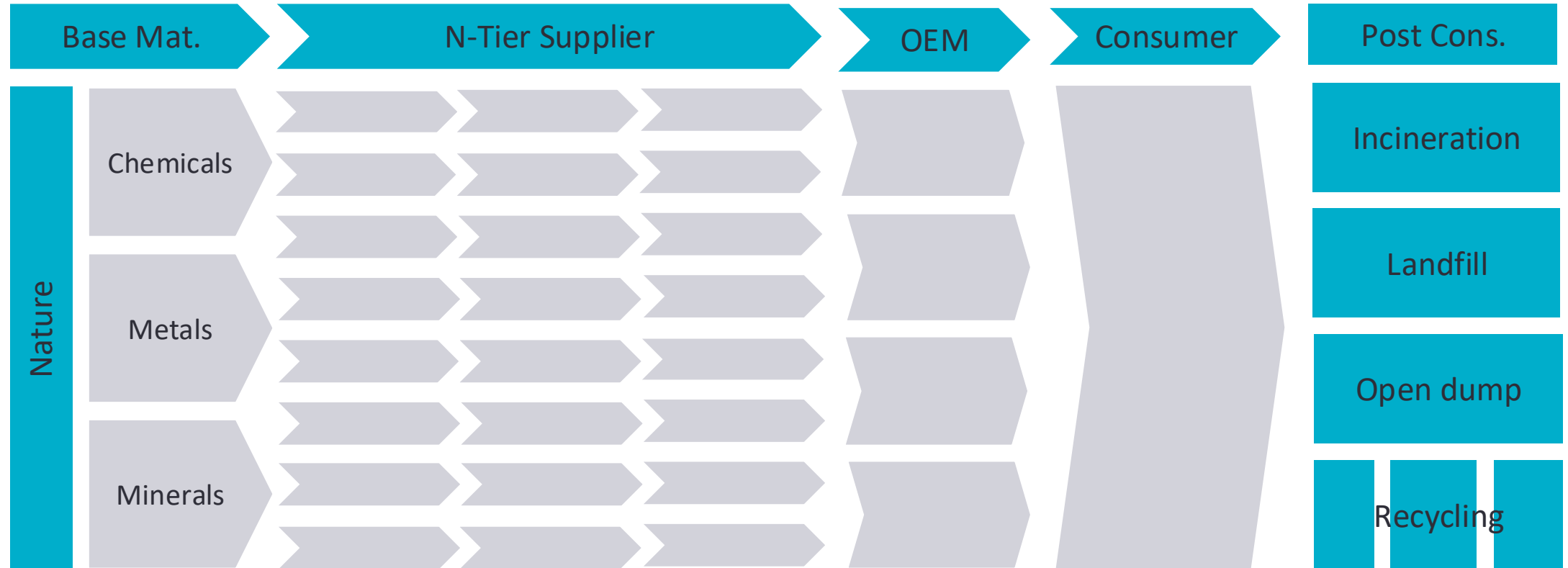
HOWEVER, MANY LOOPS CAN STILL NOT BE CLOSED TODAY



Composite materials are a major challenge because they are difficult to recycle
(e.g. lithium-ion car batteries, CFRP aircraft, wind turbines, multi-layer packaging, etc.)

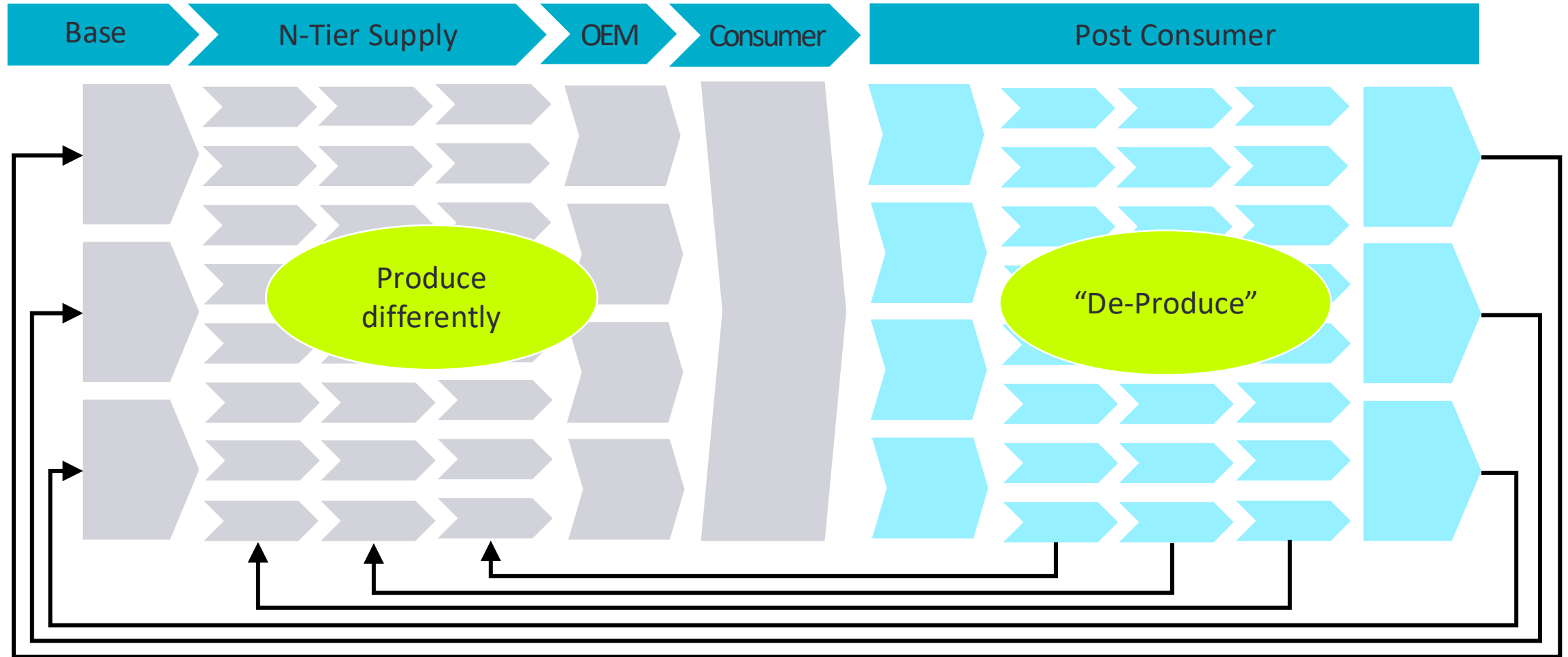


TODAY INDUSTRIES FOCUS PRIMARILY ON THE PATH TO THE CONSUMERS



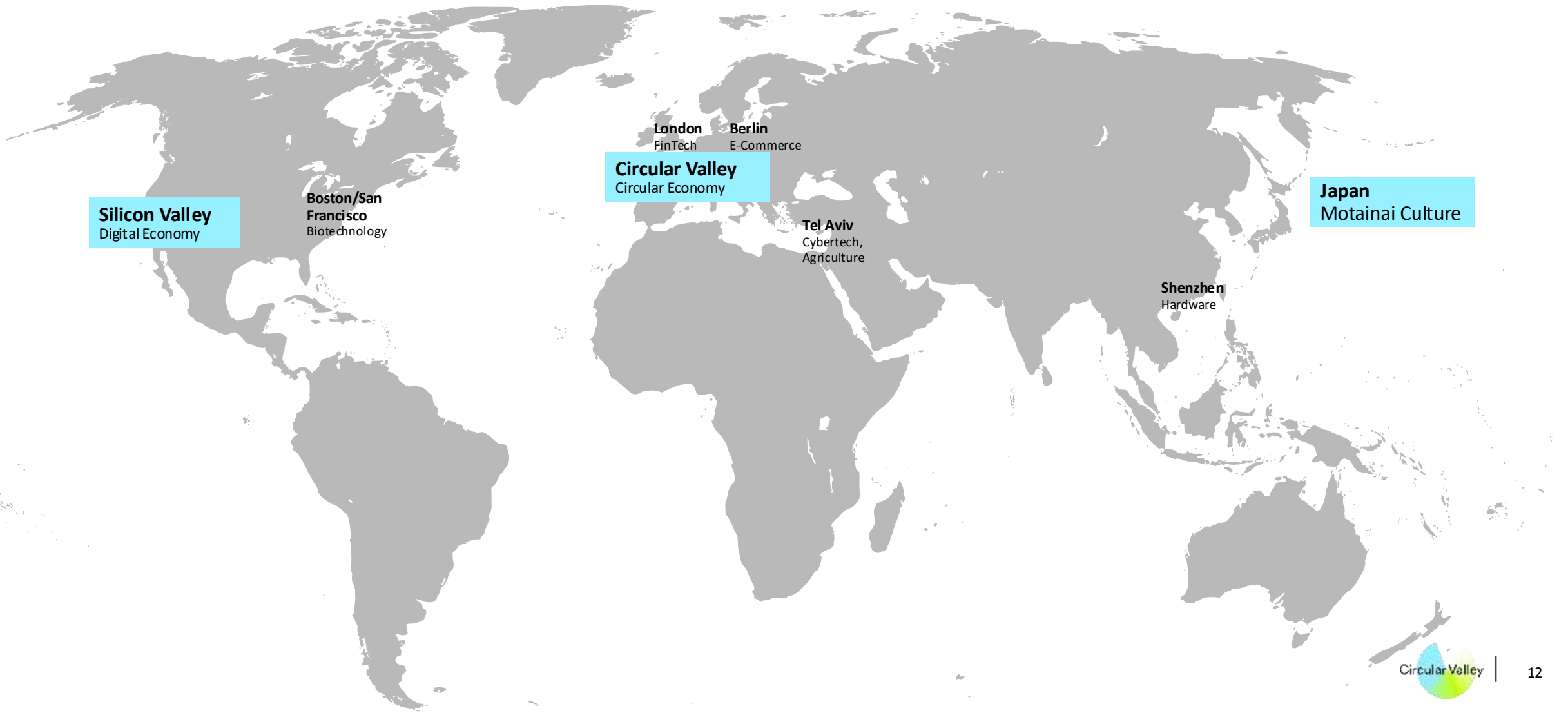
(often Downcycling)

COLLABORATION CAN LEAD TO PRODUCING DIFFERENTLY AND TO “DE-PRODUCE”



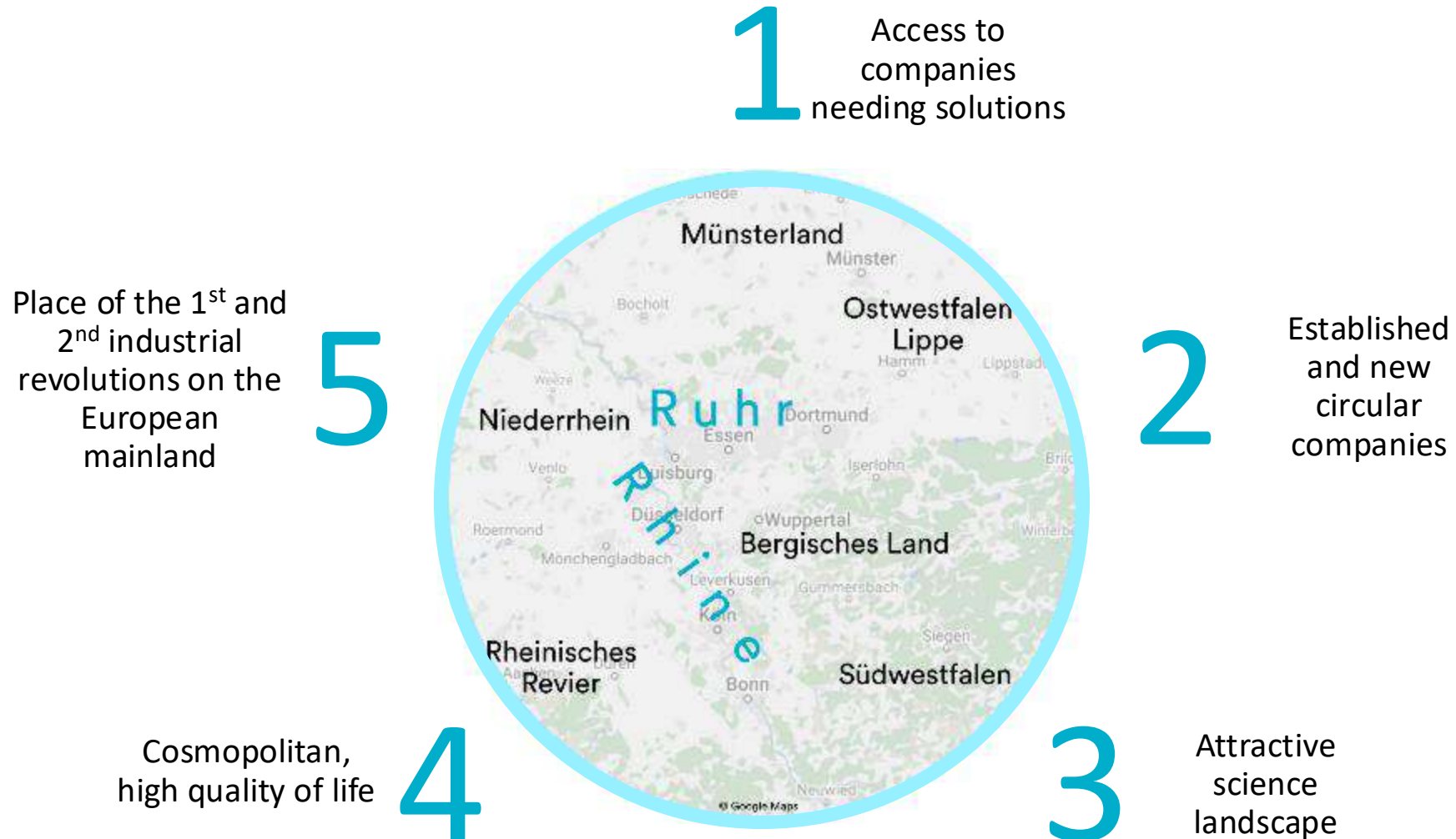
Wanted: Repair, Reuse, Remanufacture, Refurbish, Recycle
Less wanted: Repurpose, Recover

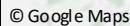
CIRCULAR VALLEY IS FOR CIRCULAR WHAT SILICON VALLEY IS FOR DIGITAL



**WHY DID WE START CIRCULAR VALLEY
IN NRW'S RHINE-RUHR REGION?**

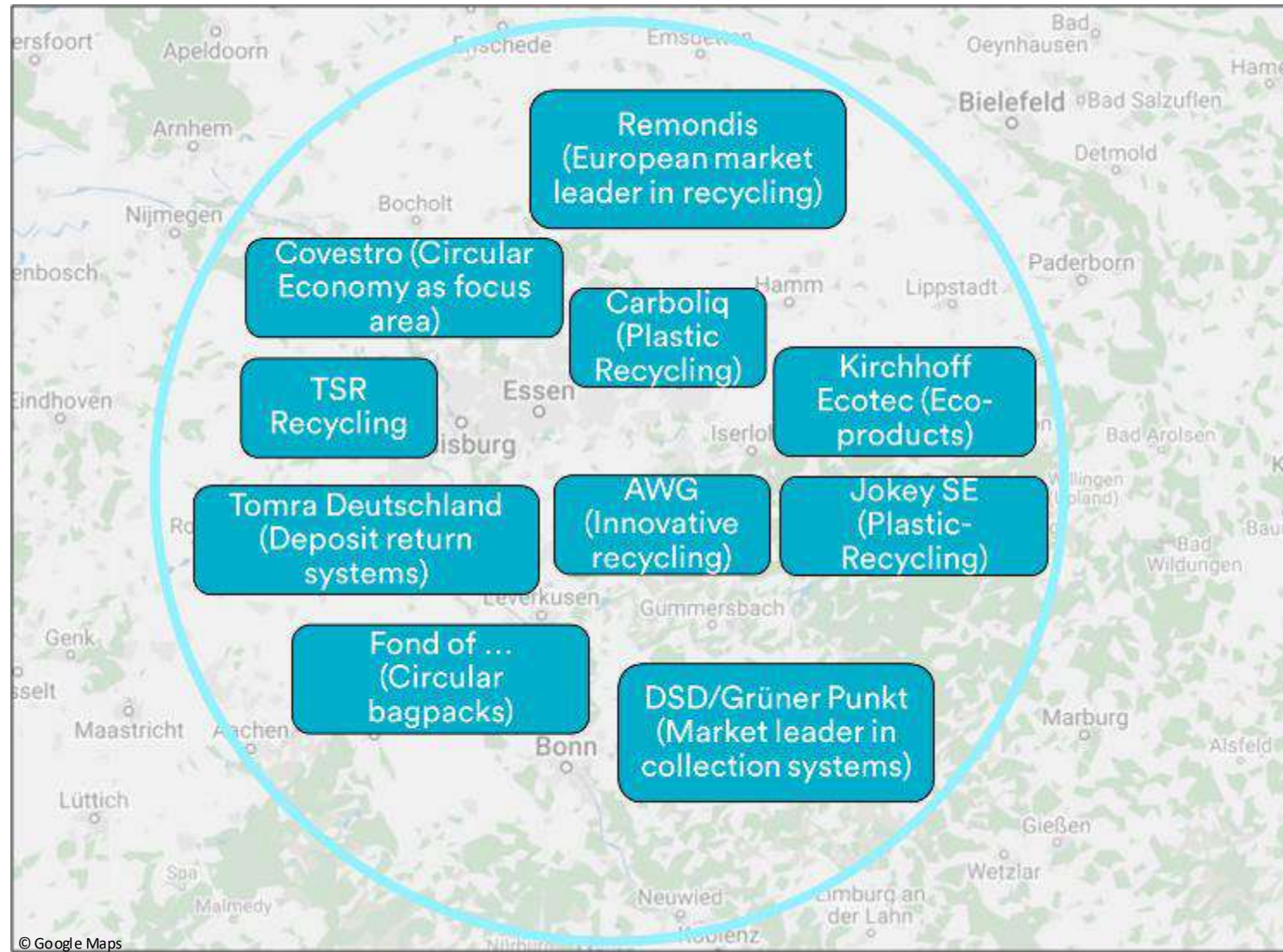
THE LARGER RHINE-RUHR-REGION IS THE IDEAL CORE OF CIRCULAR VALLEY FOR FIVE KEY REASONS





ESTABLISHED AND NEW COMPANIES IN THE REGION ARE LEADERS IN CIRCULARITY

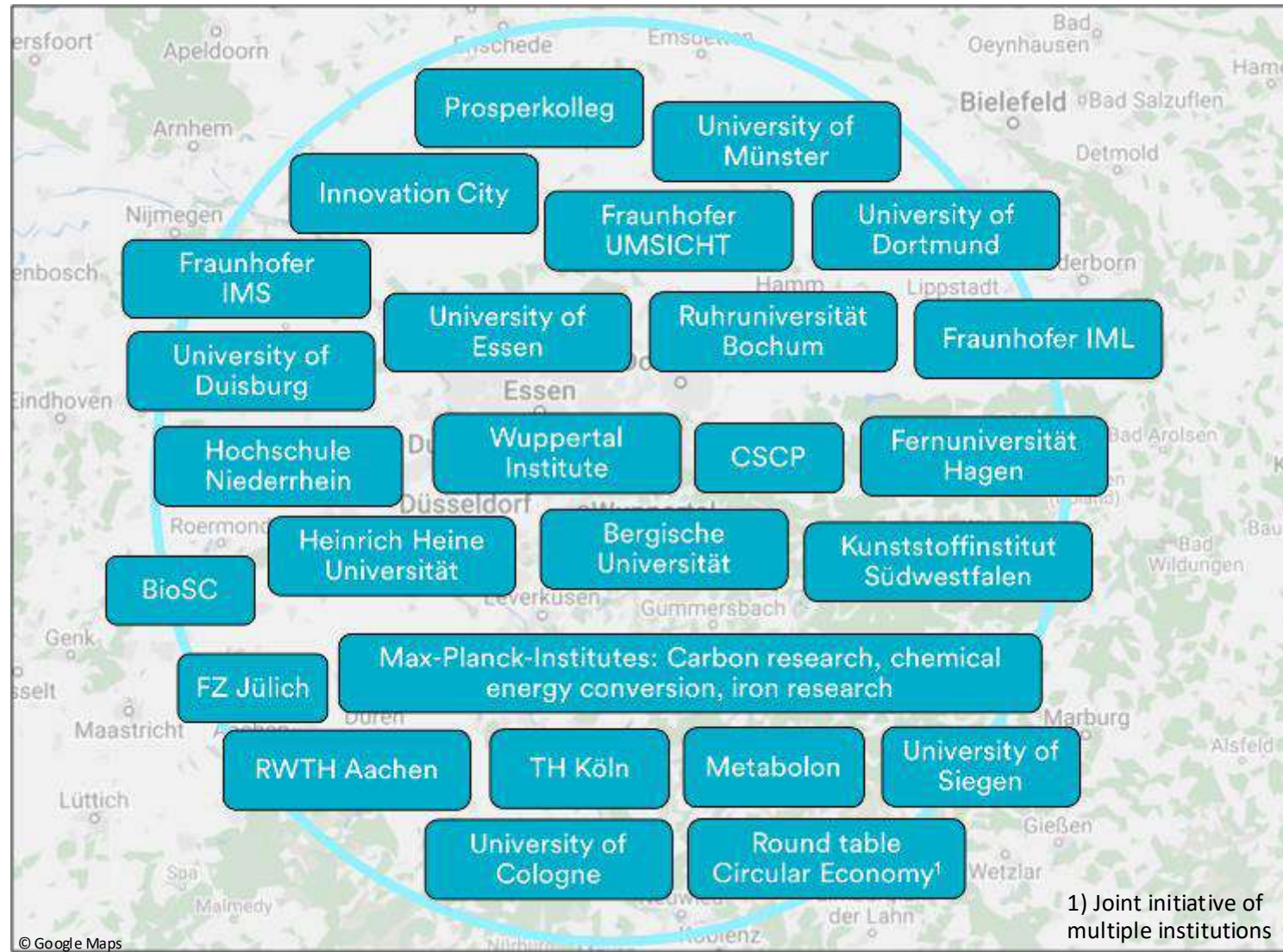
2



Selected Examples
Locations not exact

OVER 70 UNIVERSITIES AND RESEARCH INSTITUTES PROVIDE SCIENTIFIC EXCELLENCE

3



Selected Examples
Locations not exact

THE REGION IS ATTRACTIVE AND WELCOMING FOR PEOPLE FROM ALL OVER THE WORLD

4



Large international communities, e.g. Düsseldorf has a large Japanese community in Germany's only Japantown

Düsseldorf is the gateway to Europe for many international companies

Three international airports connect to the world



Over 30 opera houses, theaters and world-famous concert venues

World-reknown concerts (e.g. "Klavierfestival Ruhr")

At the same time, it is a region of doers

IT HAS A RICH HISTORY THAT LIVES ON TODAY

5



The Ruhr and Bergisches Land areas were home to many early industries

Water and coal were the basis for the 1st and 2nd industrialization waves in the 18th and 19th centuries

Broad industry coverage: metal, machinery and plant engineering, household appliances, chemicals, high-performance fibers/textiles, lighting, commerce, packaging

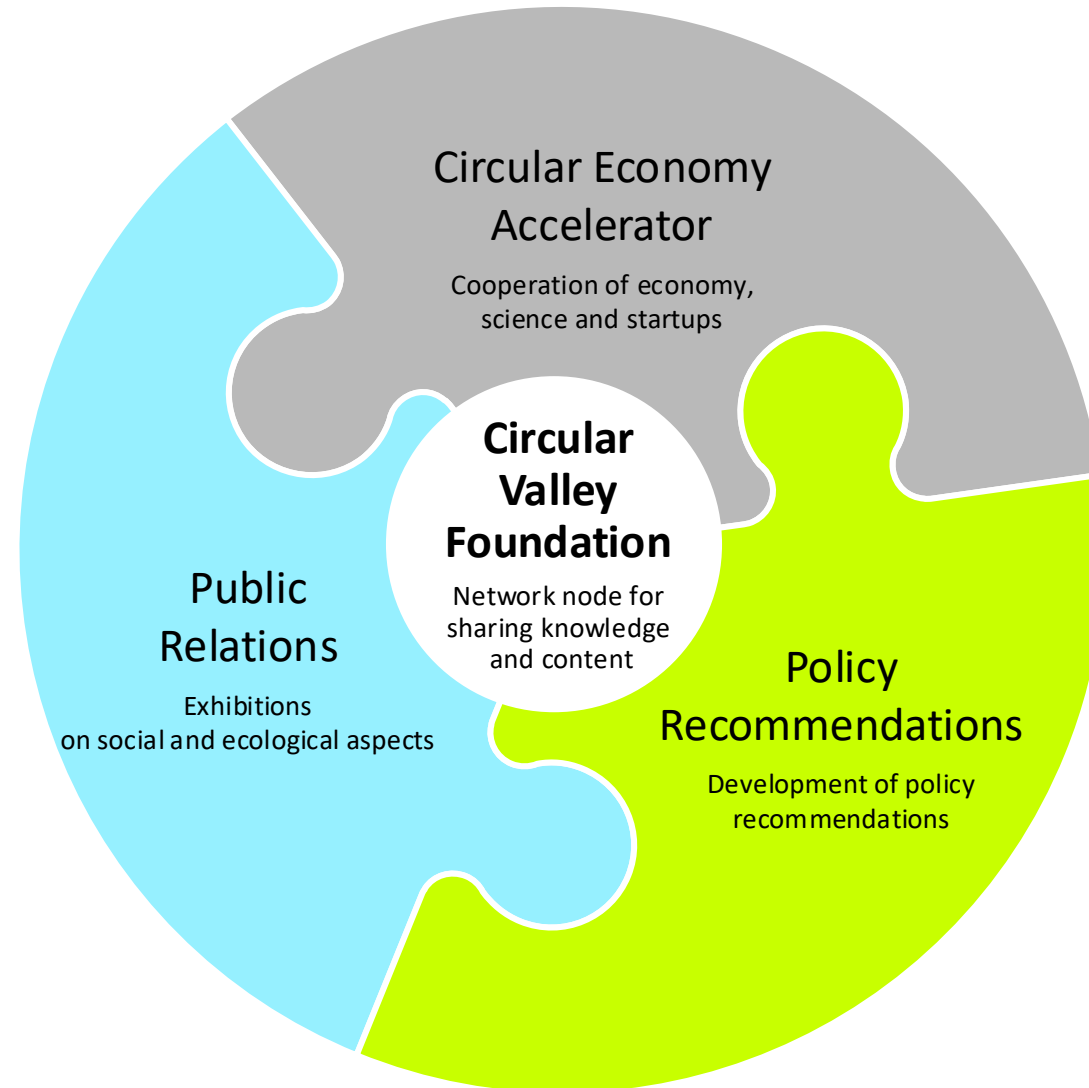
Go back to the roots and close the loop

Many investors appreciate tradition



**WHAT ARE THE KEY ACTIVITIES OF
CIRCULAR VALLEY?**

CIRCULAR VALLEY IS BUILT AROUND THE CIRCULAR VALLEY FOUNDATION



PUBLIC RELATIONS WORK BRINGS THE TOPIC TO THE CONSUMERS



© HA Schult, Trash People

Beyond business and academia, it is important that the public understands circular economy issues

Public relations - including art - can reach over 18 million people in Circular Valley

THE WORLD'S FIRST DEDICATED CIRCULAR ECONOMY ACCELERATOR



Companies from the region and beyond come into direct contact with innovative startups

Support young entrepreneurs and intrapreneurs from all over the world

Turn inventions into innovations, put business models behind



BUSINESS AND SCIENCE JOINTLY DEVELOP RECOMMENDATIONS FOR POLITICAL ACTION



TOGETHER WE SET THE STONE ROLLING



CIRCULAR VALLEY PARTNERS COVER INDUSTRIES AND VALUE CHAINS

– INTERNATIONAL BLUECHIPS AND HIDDEN CHAMPIONS



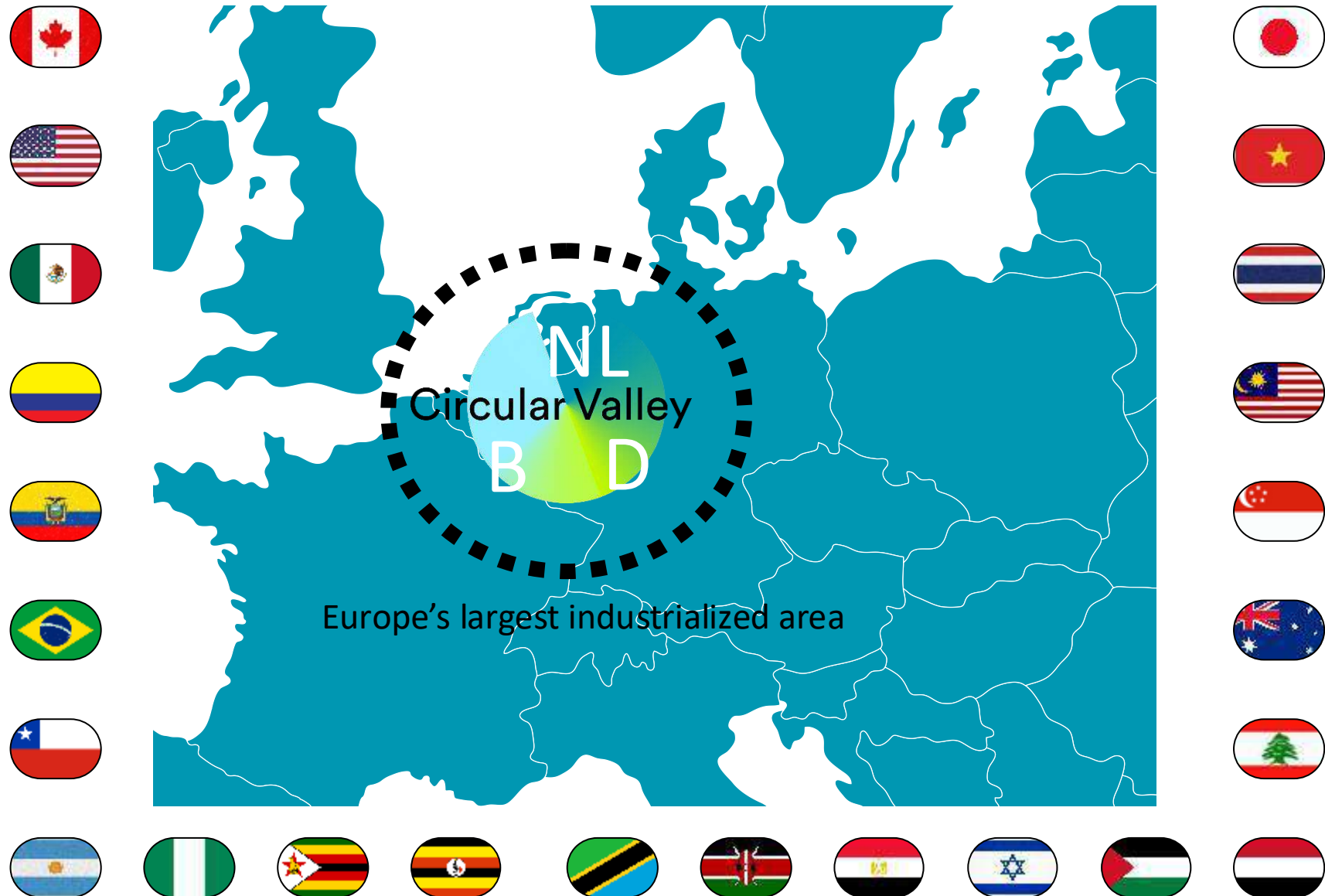
PLUS COOPERATION PARTNERS
FROM SCIENCE AND CIVIL SOCIETY



NUMEROUS SUCCESS STORIES ARE BEING WRITTEN

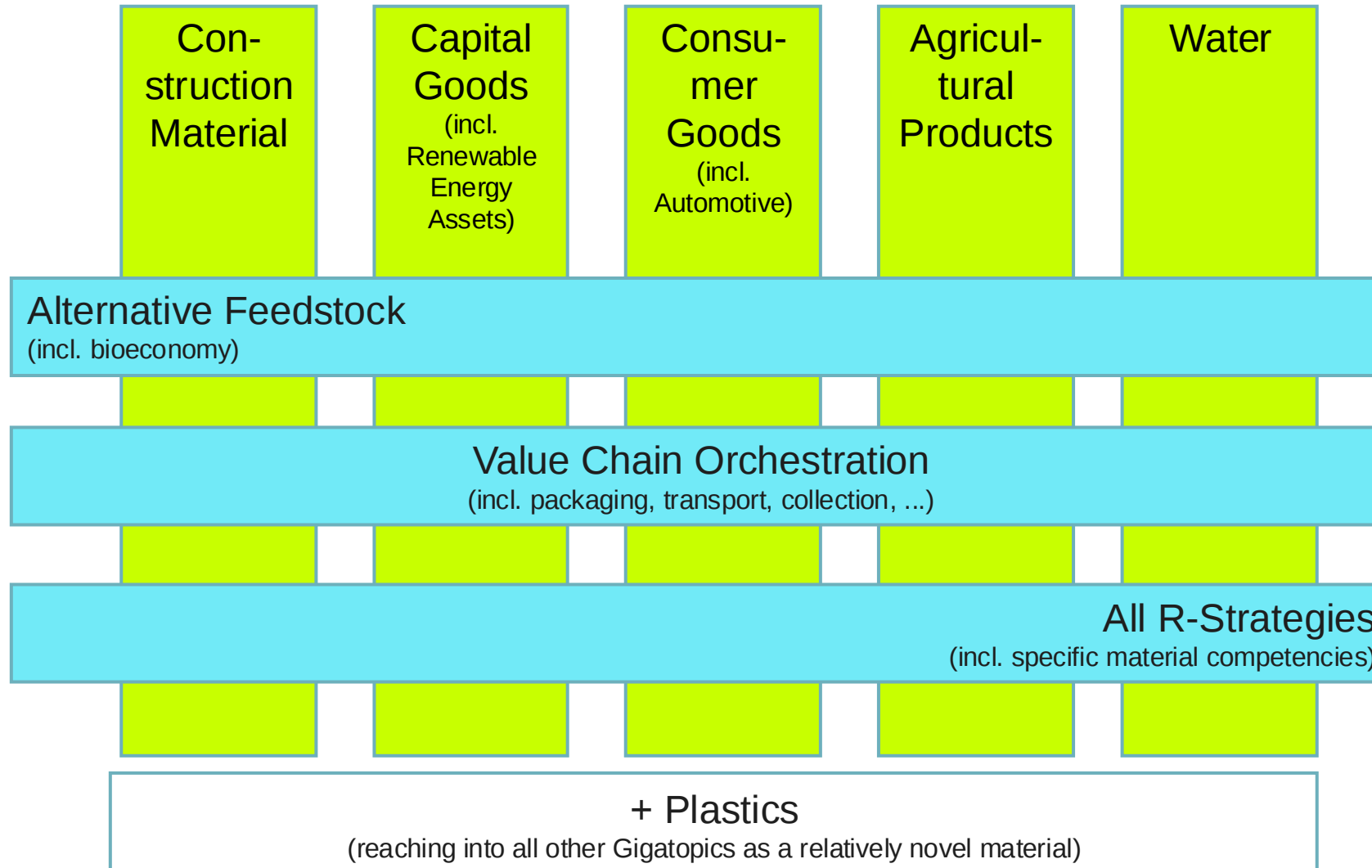


SINCE 2023 CIRCULAR VALLEY HAS GROWN INTO BELGIUM AND THE NETHERLANDS



**WHERE ARE KEY BUSINESS
OPPORTUNITIES?**

OVERALL, WE SEE MAJOR OPPORTUNITIES IN NINE GIGA TOPICS OF THE BIGGEST MATERIAL STREAMS



SPECIFICALLY, WE PURSUE THREE CENTRAL EUROPEAN COLLABORATION PROJECTS



Central European collaboration projects
(Germany/Belgium/Netherlands)

1. Future of the **Chemical Industry** as the catalyst of the Circularity Transformation
2. Using **Batteries** as the core enablers of electrification of the economy (recycling and production)
3. Possibilities of closing loops for **Building Materials** in a cross-border perspective

REGULATION IN EUROPE IS DRIVING BUSINESS OPPORTUNITIES – WE CAPTURE THEM IN CIRCULAR VALLEY PARTNER PROJECTS

Driver

1. EU and national regulation on Critical Raw Materials (major effects as of 2029)
2. Expansion of Emission Trading System (ETS) to additional industries in ETS2 in 2028
3. Packaging and Packaging Waste Directive (PPWR) with major quotas as of 2030
4. Economic threats and pressure to core European industry (automotive)
5. Need for reliable and cheap source of energy

Specific business opportunity

- Phosphorus recovery from sewage sludge as a central challenge of **Water** management
- Technologies of **CO₂ Capture** at waste incineration plants using best practices from other industries
- Chemical Recycling** as an economic complement to mechanical recycling for contact sensitive packaging
- Establishing circularity in **Automotive** and developing an **industry roadmap**
- Double use of land for nutrition and energy purposes through **AgriPV**

EXAMPLE AGRI-PV: COMBINING LAND USE FOR AGRICULTURE AND ENERGY PRODUCTION



Case study: Agro Photovoltaics

- Cheap and reliable local energy is the basis of an independent and resilient economy
- A circular economy needs energy to close the material loops
- Photovoltaics is the cheapest form of electricity/ energy
- Reliable in combination with batteries and chemical energy storage (e.g. hydrogen)
- Roof surfaces cannot meet the demand for photovoltaics – (agricultural) land will be needed
- In Germany 10% of agricultural land would suffice to meet the total energy demand (not only electricity)
- Agri-Photovoltaics can avoid conflicts between energy production and agriculture through “double use” of land

COLLABORATION AMONG CIRCULAR VALLEY PARTNERS CAN BRING THE NEEDED SOLUTIONS

Agriculture/ Agronomy



Crop Science



BayWa r.e.

BASF
We create chemistry

...

Optimize agronomy
below PV panels

Mechanical Engineering/ Material experts



TÜNKERS
Erfindergeist serienmäßig.



BECKER

Coroplast
group



EVONIK
Leading Beyond Chemistry

Schneider
Electric



...

Bring down cost of substructure by 10x
(easy to set up, operate and later recycle)

Energy/ Energy storage

EnBW

WSW.

JM Johnson
Matthey

...

Optimize energy yield,
given agronomic needs

**HOW CAN YOU ACCESS THE
CIRCULAR VALLEY ECOSYSTEM?**

WE ARE HAPPY TO CONNECT YOU WITH OUR MAIN ACTIVITIES

Accelerators



- 180+ Startups
- 45+ Countries
- € 350+ M Funding
- Cooperation with Circular Valley Partners
- Work on Gigatopics

Flagship Events



- Circular Valley Forum (November, Wuppertal) high-level exchange (decision makers & experts)
- Circular Valley Convention (May, Düsseldorf) Expo and Convention
- Partner Talks, Roundtables with companies and politics

Joint Projects



- X-border projects (DE/B/NL) (Chemistry, Battery, Building material)
- Partner Projects including Startups
- International Projects e.g. AgriPV with Worldbank



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Circular Valley Forum

Circular Valley unites people to jointly shape a
resilient, future-proof Circular Economy



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President
German Trade Union Confederation



Dr. Thorsten Latzel
Praeses
Protestant Church, Rhineland



HA Schult
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Mona Neubaur
Deputy Minister President
North Rhine-Westphalia



Circular Valley Convention:

2 days,
5 co-hosts
2.000+ guests,
100+ speakers,
130+ exhibitors





Thank you very much for your attention
and thank you NRW Global Business for the opportunity of today's seminar!

Carsten.Gerhardt@circular-valley.org



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