BAK
economic intelligence

Green Technologies

Regional Economic Analyses

Basel, May 2020

bak-economics.com

Motivation

As climate change continues, committed actions need to be taken to protect the environment. Therefore, Green Tech plays an important role. BAK Economics defines Green Tech as all environmentally friendly technologies that increase energy efficiency, reduce resource and energy consumption, reduce pollution and enable a more sustainable economy. Green Tech thus covers all stages of the value chain from research and development to the production of capital goods and their application.

The demand for "green" products, processes and services will continue to grow in the coming years. Companies will have to operate more sustainably in order to remain competitive in the future, since products from all sectors will be measured by their energy balance. Green Tech will thus become a key and cross-sectional technology for all industries.

For economic regions the promotion of innovation in the field of Green Tech is therefore playing an increasingly important role. At this point BAK Economics can support regional economic policy with data bases and analyses. Since these are cross-sectional areas of the economy, this data basis cannot simply be extracted from the conventional sector statistics but must be compiled by means of additional surveys and estimates.

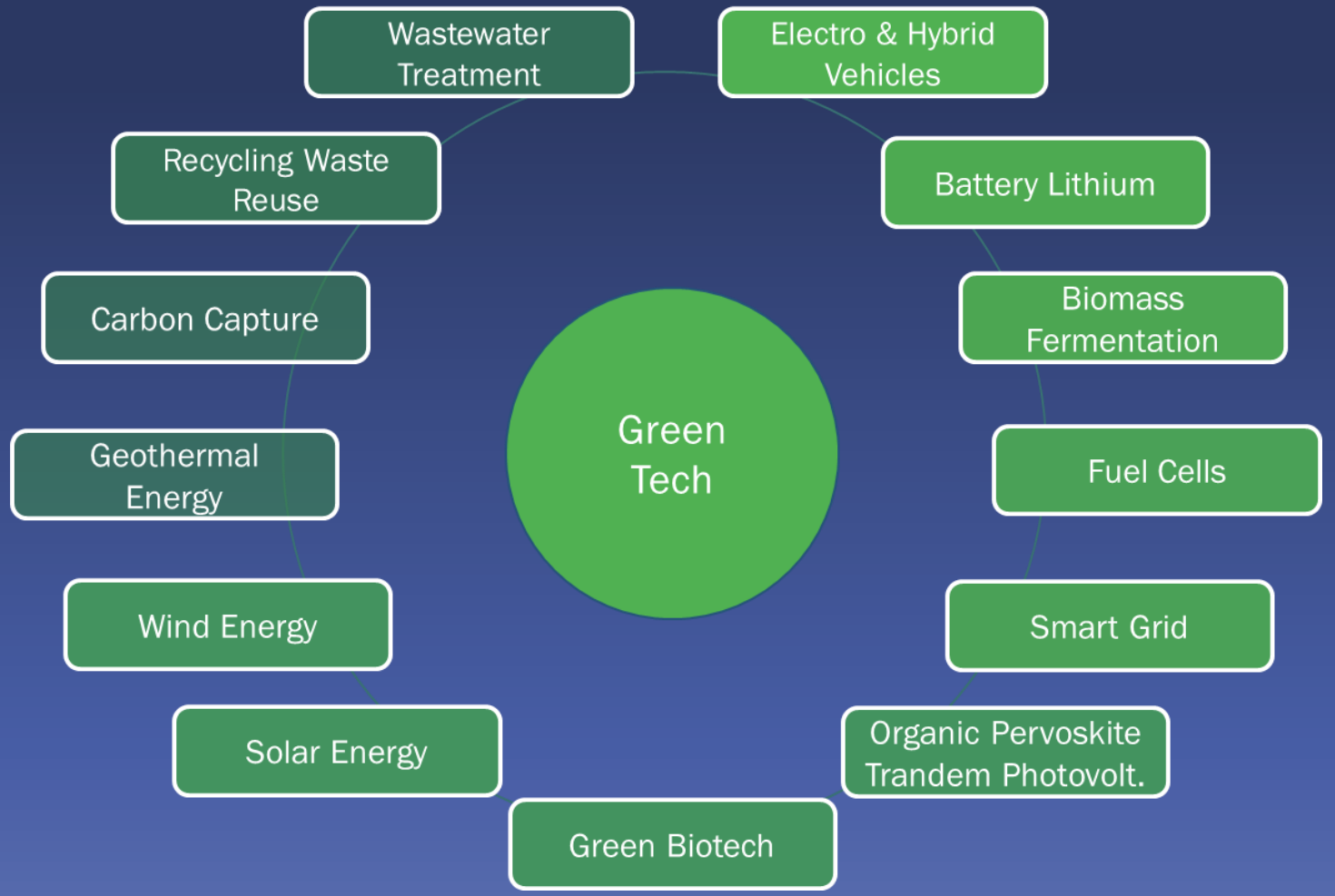
Previous Green Tech analyses often focus on the survey of workplaces, workplaces or employees. BAK Economics has developed a new analysis approach based on patent data, which allows a very precise matching and thus makes the innovation dynamics in Green Tech clusters identifiable and (internationally) comparable.

Green Tech

Definition Green Tech (BAK, IGE)

By Green Tech we mean all processes, products or services that reduce negative environmental impacts by improving energy efficiency, promote the sustainable use of resources or increase environmental protection.

This area includes all environmentally friendly technologies that are used, for example, in the fields of renewable energy, materials, information technology, environmentally friendly transport, green chemistry and recycling.

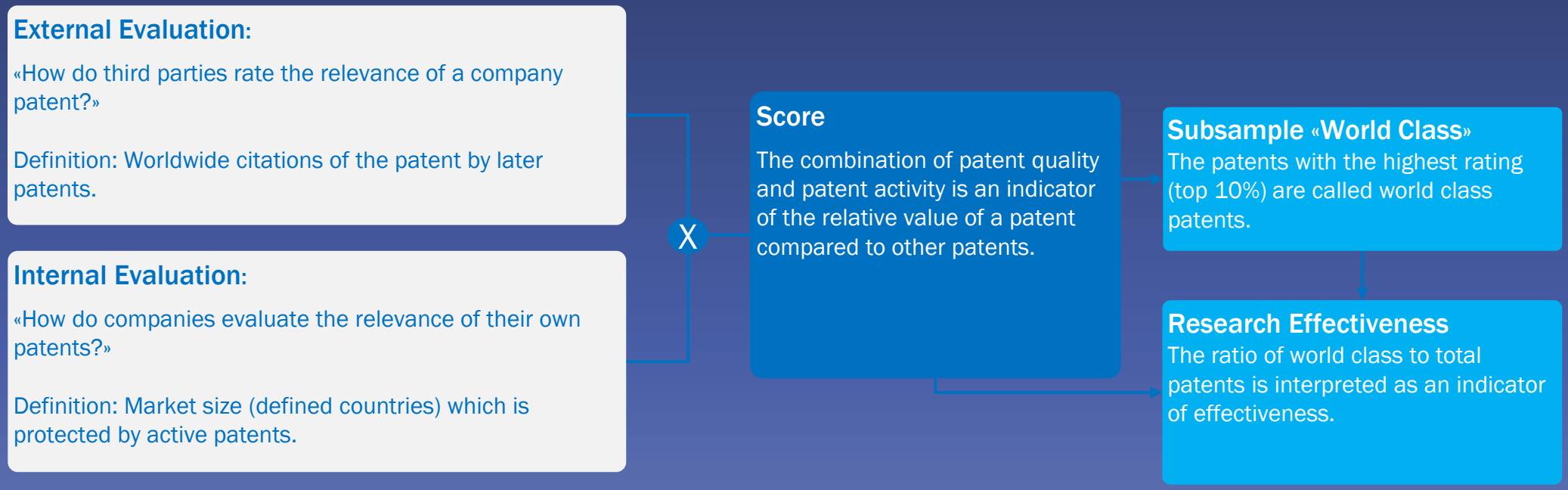


Source: BAK Economics, IGE

Methodology

Making innovation measurable - patent quality and patent activity

Together with the Institute of Intellectual Property (IGE), BAK Economics has developed a new approach to evaluate patents which - in contrast to conventional patent analyses - allows for a qualitative evaluation of patents and thus allows for a focused evaluation of innovation performance in the field of top-level research. The database can be evaluated both by region and at the level of individual companies.



Source: BAK Economics, IGE

Examples for Analyses

Focus Green Tech Cluster

- Has the specialisation changed?
- Which technology fields are particularly dynamic in the region?
- Which technology combinations have the highest patent ratings?

Focus International Benchmarking

- Which are the most important Green Tech clusters in an international comparison?
- Which technology segments are particularly dynamic in global terms?
- How is the region positioned in these segments in terms of size and growth?

Focus Companies

- In which technologies are regionally relevant companies active?
- How high is the research quality of the regionally relevant companies?
- Which companies from other regions would be a suitable addition to the regional cluster?

→ The following slides illustrate some examples of possible evaluations.

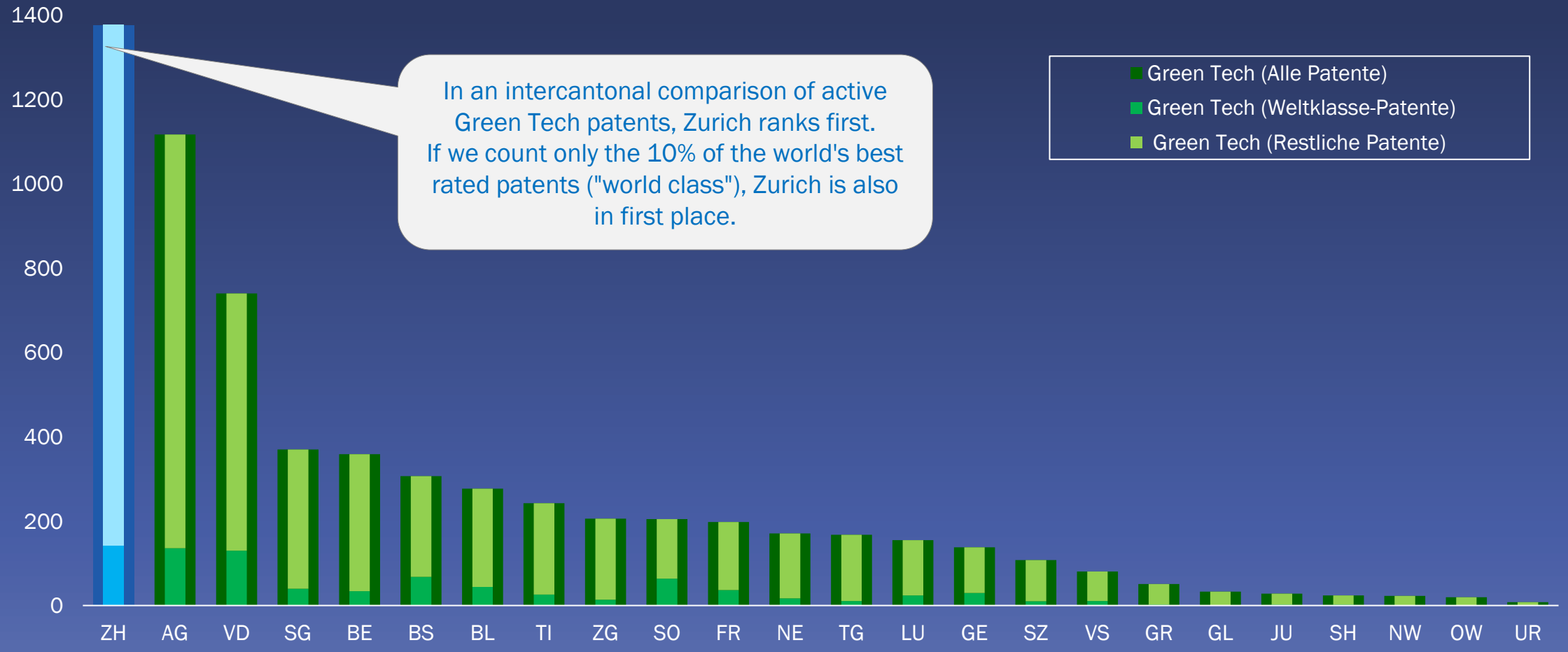
BAK
economic intelligence

Examples for Analyses

bak-economics.com

Zurich in intercantonal comparison

Stock of active Green Tech patents in intercantonal comparison, 2019

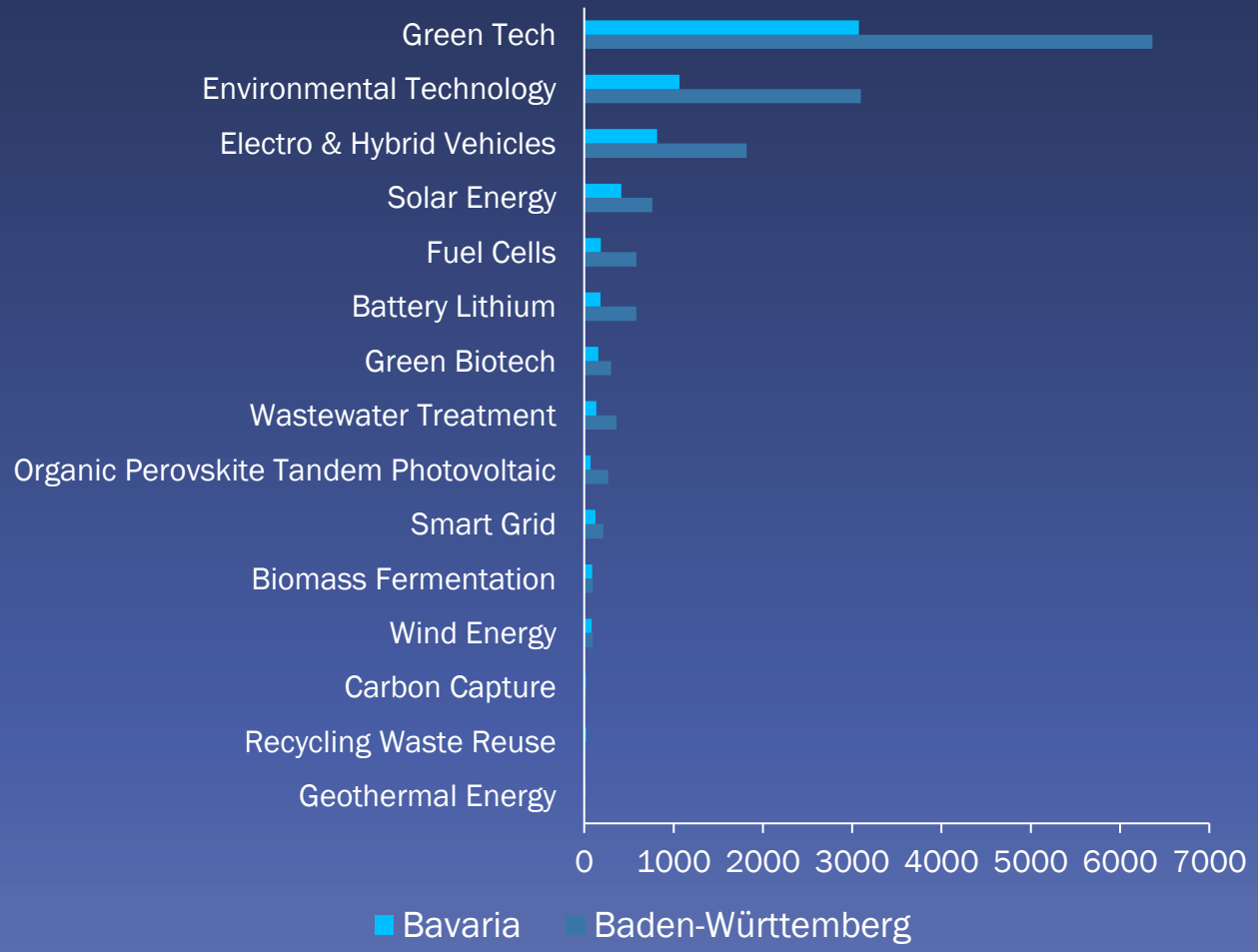


Source: BAK Economics, IGE

BAK economic intelligence

Bavaria vs. Baden-Württemberg

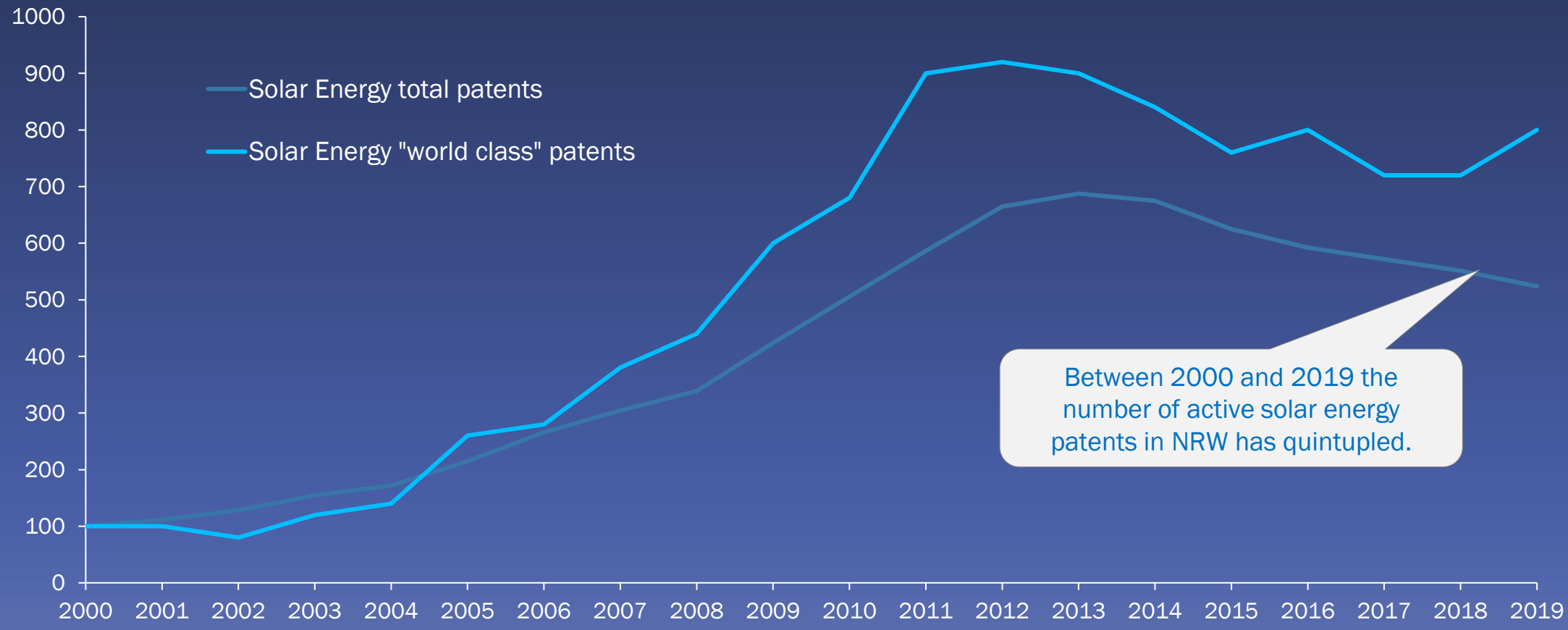
Number of patents in Green Tech



Source: BAK Economics, IGE

Development of solar energy patents in North Rhine-Westphalia

Development of solar energy patents 2000-2019, index 2000=100

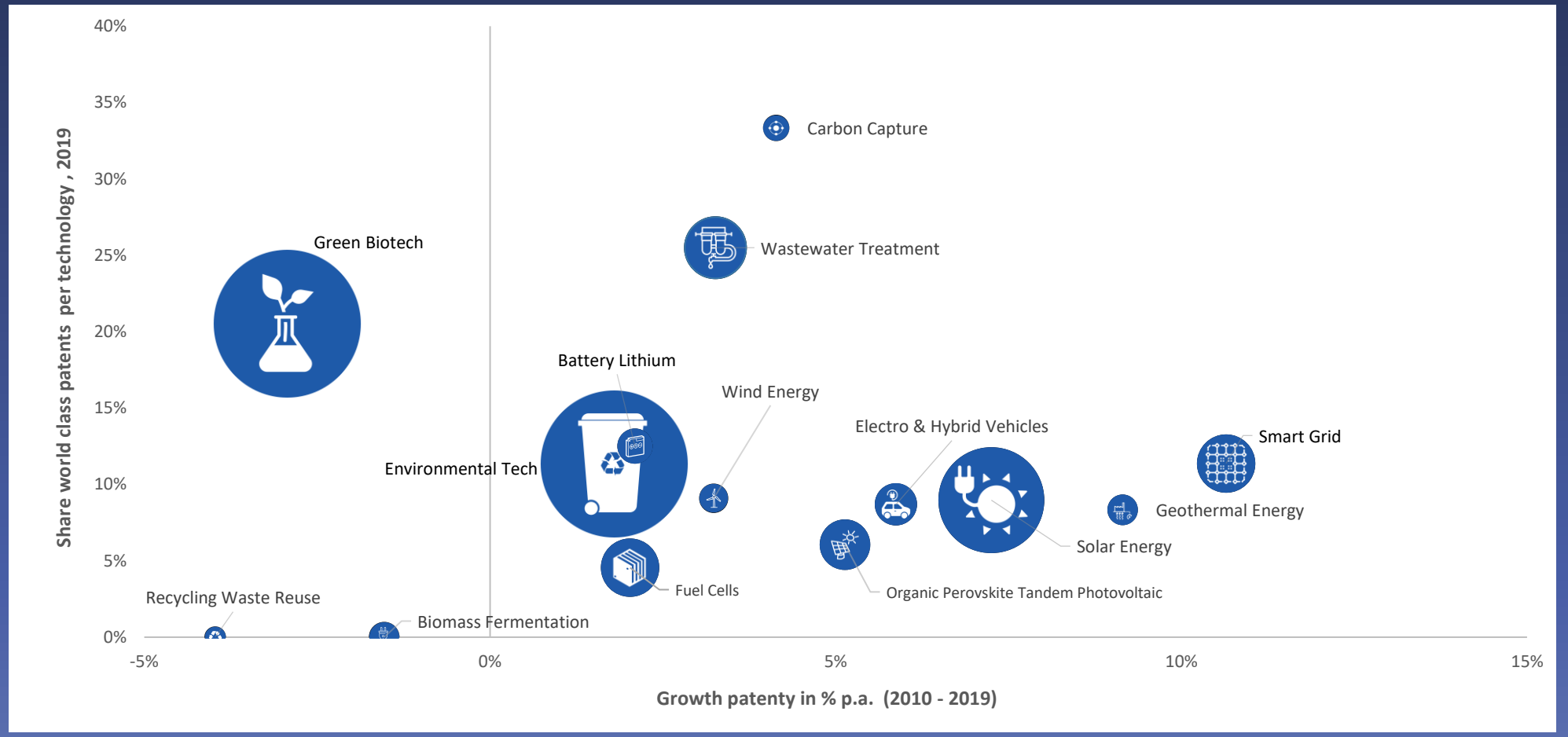


Source: BAK Economics, IGE

BAK economic intelligence

Green Tech Profile Zurich

Stock (bubble size), share of “world class” patents (Y-axis) and growth patents (X-axis) in Green Tech technologies

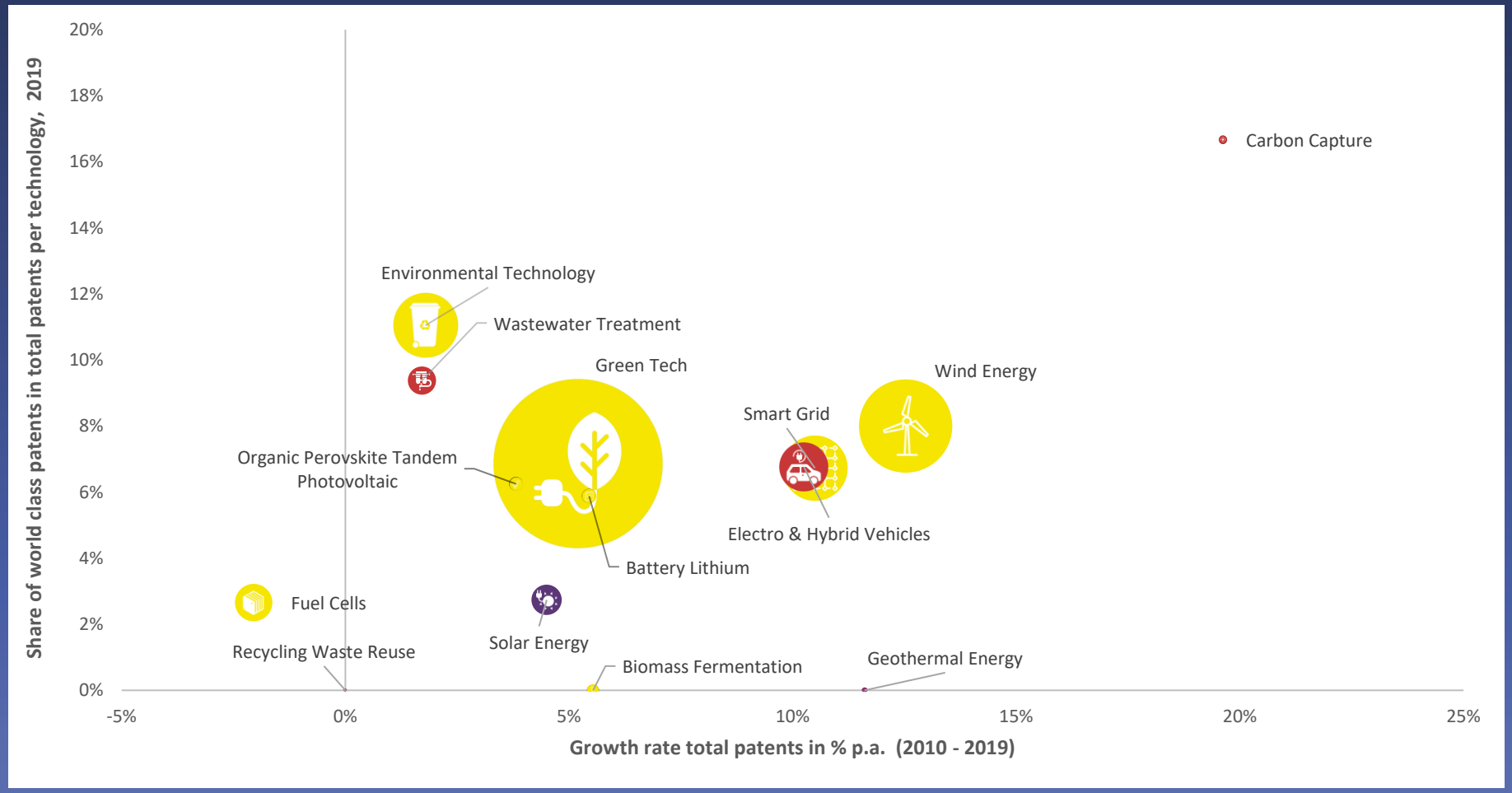


Source: BAK Economics, IGE

BAK economic intelligence

Green Tech Profile Siemens

Stock (bubble size), share of “world class” patents (Y-axis) and growth patents (X-axis) in Green Tech technologies



Source: BAK Economics, IGE

References (selection)

Contact

Andrea Wagner

Head of Regional Economic Analysis

andrea.wagner@bak-economics.com

+41 61 279 97 04

Marc Bros de Puechredon

Chairman of the Executive Board and
Head of Marketing and
Communications

marc.puechredon@bak-economics.com

+41 61 279 97 25

BAK economic intelligence