Clean Innovation & Intellectual Property: A Knowledge Synthesis

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Problem

- Intellectual property as an **indicator**
  - Data about innovation are limited; patent counts are among the only sources of longitudinal, international data on new cleantech.
- Intellectual property as an **incentive**
  - Fast-track if cleantech “helps resolve or mitigate environmental impacts or conserves the natural environment and resources.”
- Intellectual property as an **impediment**
  - $30M invested in “Innovation Asset Collective” to help SMEs defend against patent infringement lawsuits and raise awareness of open science.

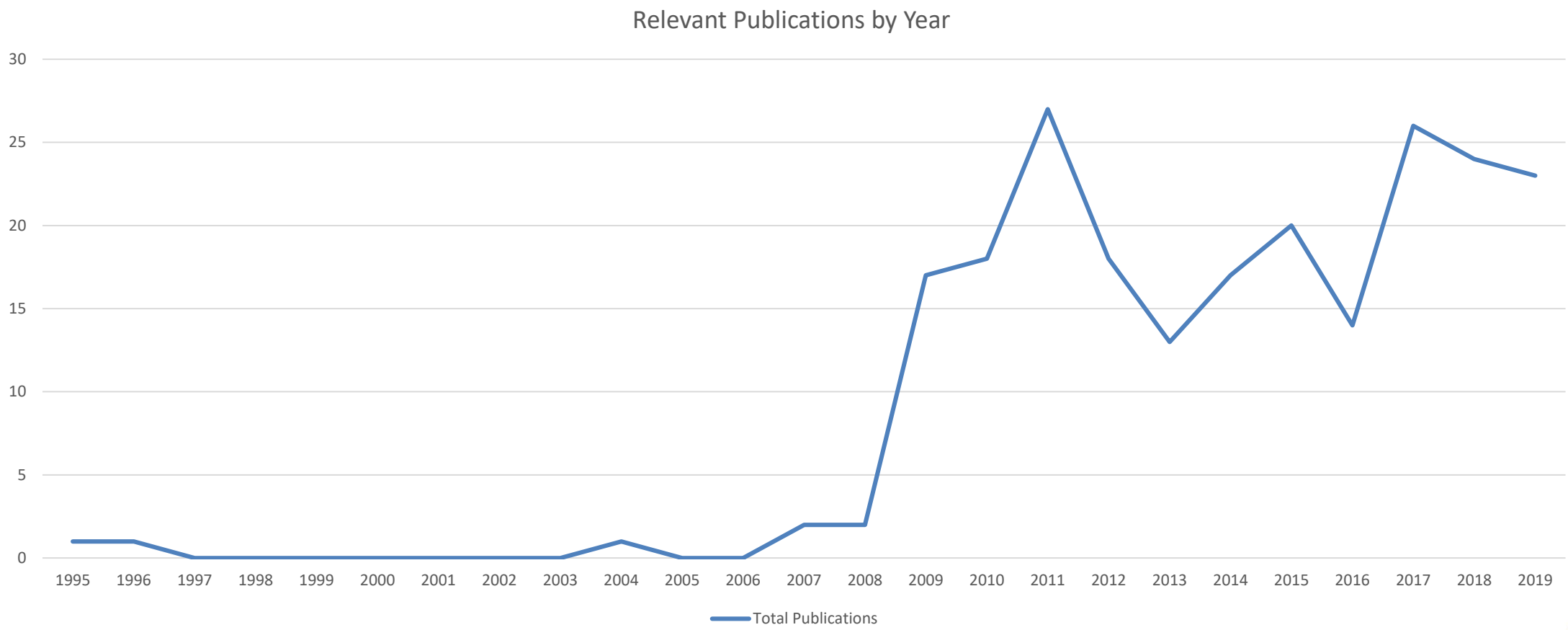
Objectives

- IP rights impact clean innovation, but we don’t know how.
  - Identify, classify, and synthesize what we do know
  - Improve IP laws, policies, and practices accordingly
- Connect knowledge is needed at two levels
  - Macroeconomic policy questions about IP and clean innovation
  - Firm-level IP management strategies to drive clean innovation

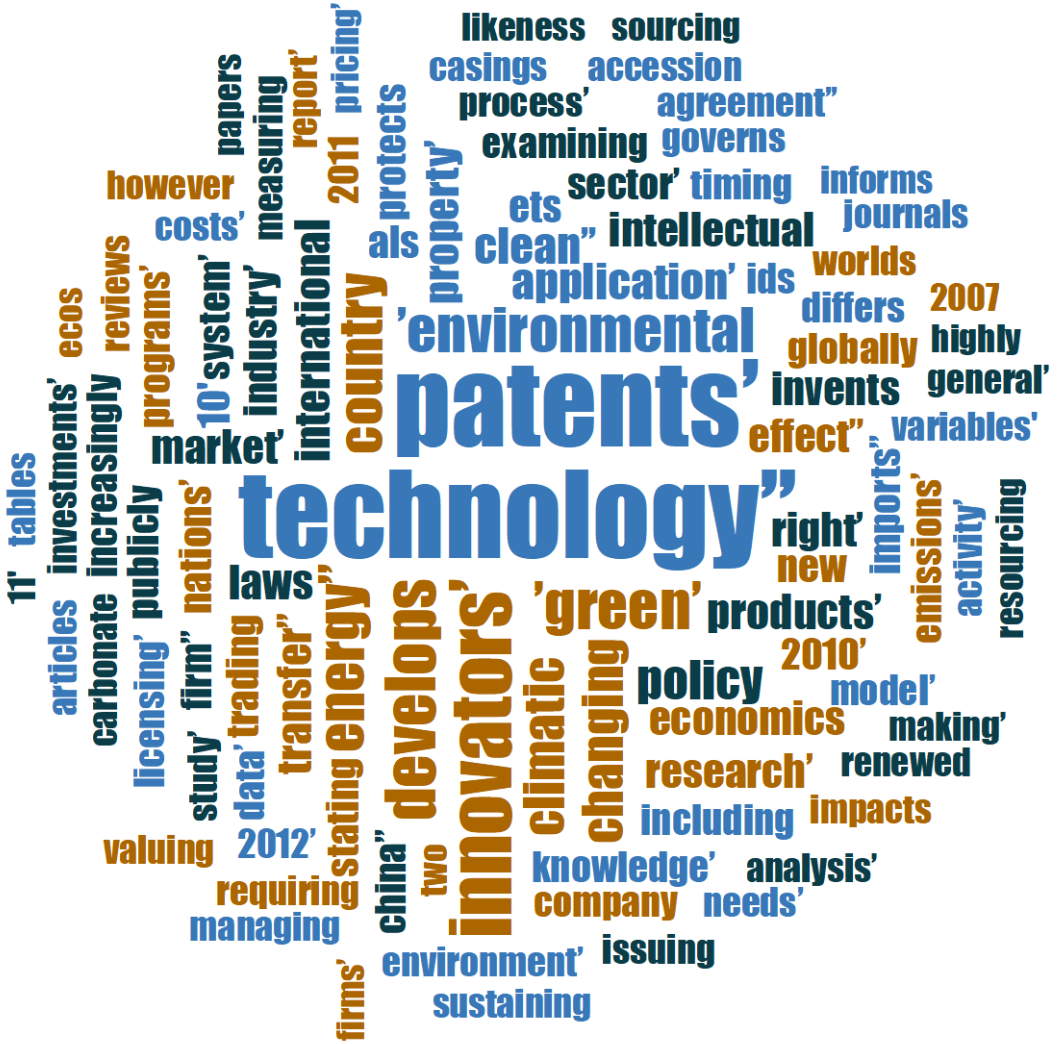
Methods

- Literature review, discourse analysis, and knowledge synthesis
  - Systematic searching of multidisciplinary academic databases
  - Citation tracing from use-oriented policy and grey literature
  - Intersection of synonyms for “intellectual property” and “clean innovation”
- Dataset of 224 relevant sources
  - Initially ~600 sources containing keyword combinations
  - Quantitative screen filtered out 313 tangential sources, down to 286
  - Qualitative screen filtered out 62 irrelevant sources, down to 224

Results



Results



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Results

- Transformation in terminology used to denote “clean technology”
  - 2009: multiple combinations of words and phrases were used
  - 2011 & 2017: the terms ”green” and “clean” emerged as dominant
- Shifting emphasis on technology transfer (innovation diffusion)
  - 2009: little mention of “transfer” of technology
  - 2011: “transfer” among top-20 most frequently used terms
  - 2017: “transfer” not in the top-100 terms

Knowledge Gaps

- Ownership of data up for grabs
  - Not patents, but trade secrets, copyright, etc.
  - Indigenous traditional knowledge
- Little/no emphasis on diffusion of cleantech
  - Adoption in developing countries is essential
- Open innovation neglected as an opportunity
  - IP can impede or delay collaboration

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