



Kwinana
INDUSTRIES COUNCIL

Kwinana Industrial Symbiosis Project 2020 (KISP-2020)

**IE Day, Spotlight Session, SLOT 9, IS/EID Section
21 June 2021**

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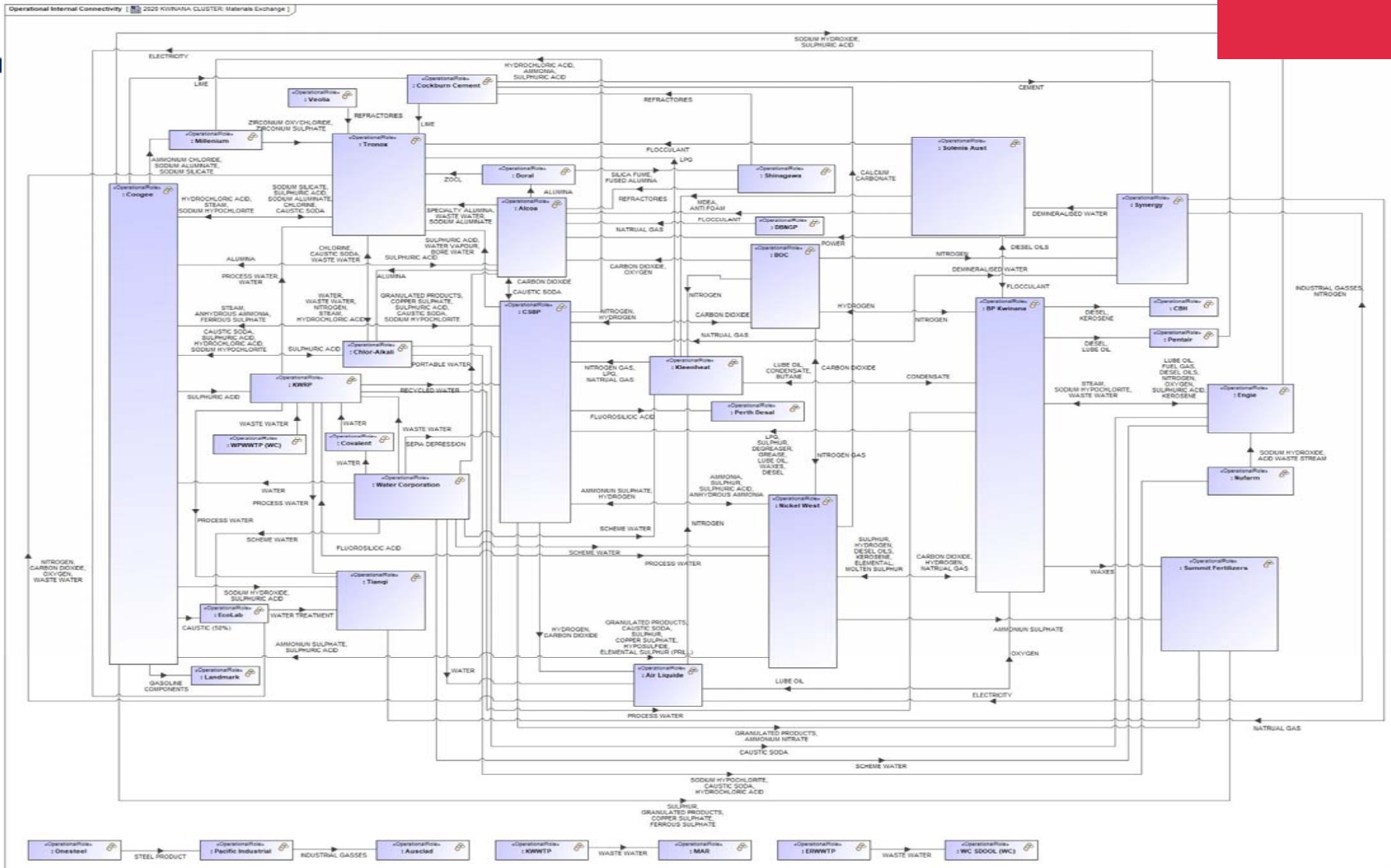


Overview

- Background
- Objectives
- Methodology
- Survey responses
- Results/discussions
- Conclusions



Synergy exchanges KIA 2020





Background of Kwinana Industries Council (KIC)

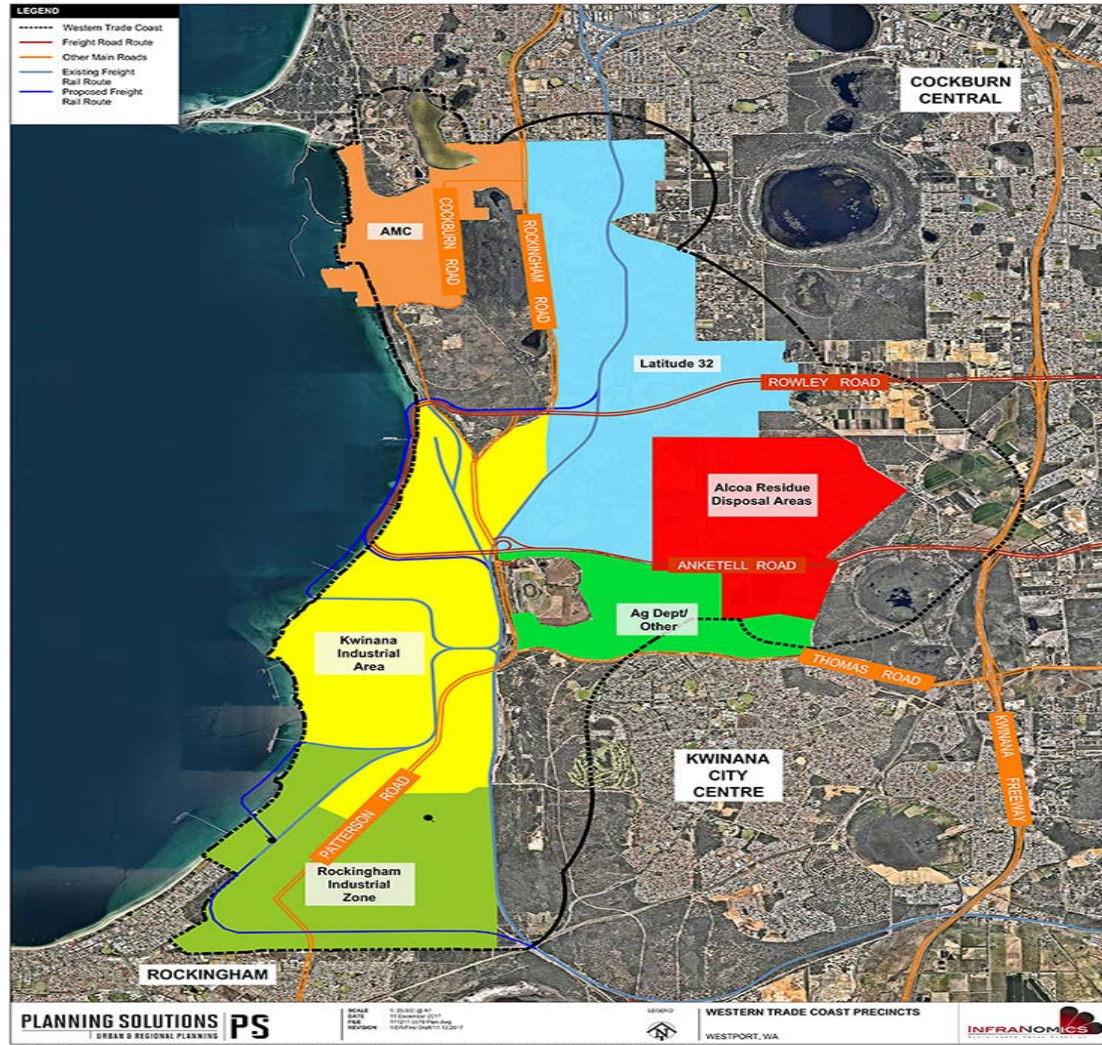
- Incorporated in 1991 as an industry association
- Geographically focused on Western trade Coast (WTC)
- 14 full members and 20 associate members.
- WTC has four industrial suburbs:
 - Kwinana Industrial Area (KIA - core heavy)
 - Rockingham Industry Zone (RIZ) and
 - Australian Marine Complex (AMC)
 - Latitude 32
- One of the World's best practice examples of industrial symbiosis

Background of the study

- KIC carried out the review of IS exchanges in KIA/WTC.
- Updated WTC report data of IS 2013 to 2020.
- In partnership with Murdoch University & Dassault Systems.
- Digitisation of existing schematic using Catia Magic.
- Under the Supervision of KIC Director, Mr. Chris Oughton &
- Dr. Biji Kurup



WTC MAP



Objectives

Comparison and illustration

Compare and illustrate the growing complexity of industrial interrelation over the years.

Streamline

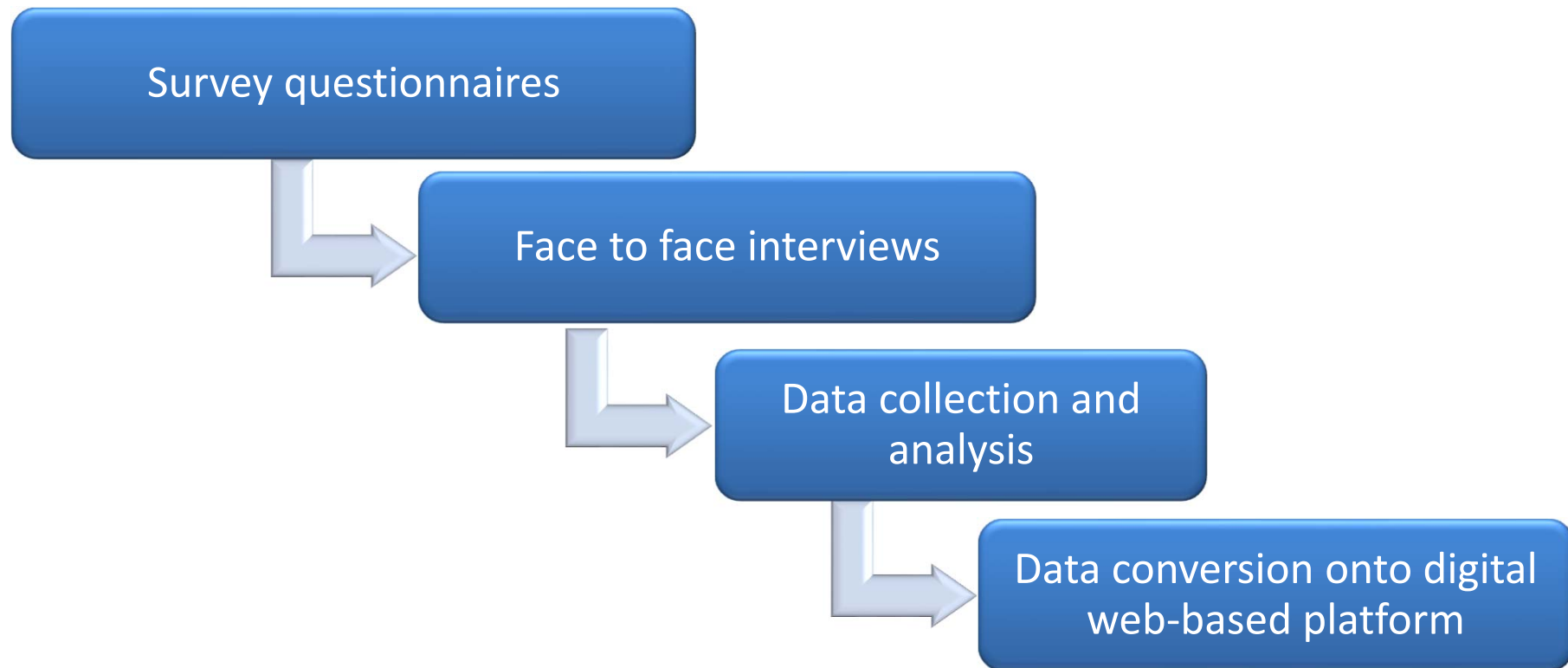
Update and review the product and by-product, and utility exchanges occurring among the WTC companies from 2013 to date (2020).

Data collection and Analysis

Collect data from KIC members

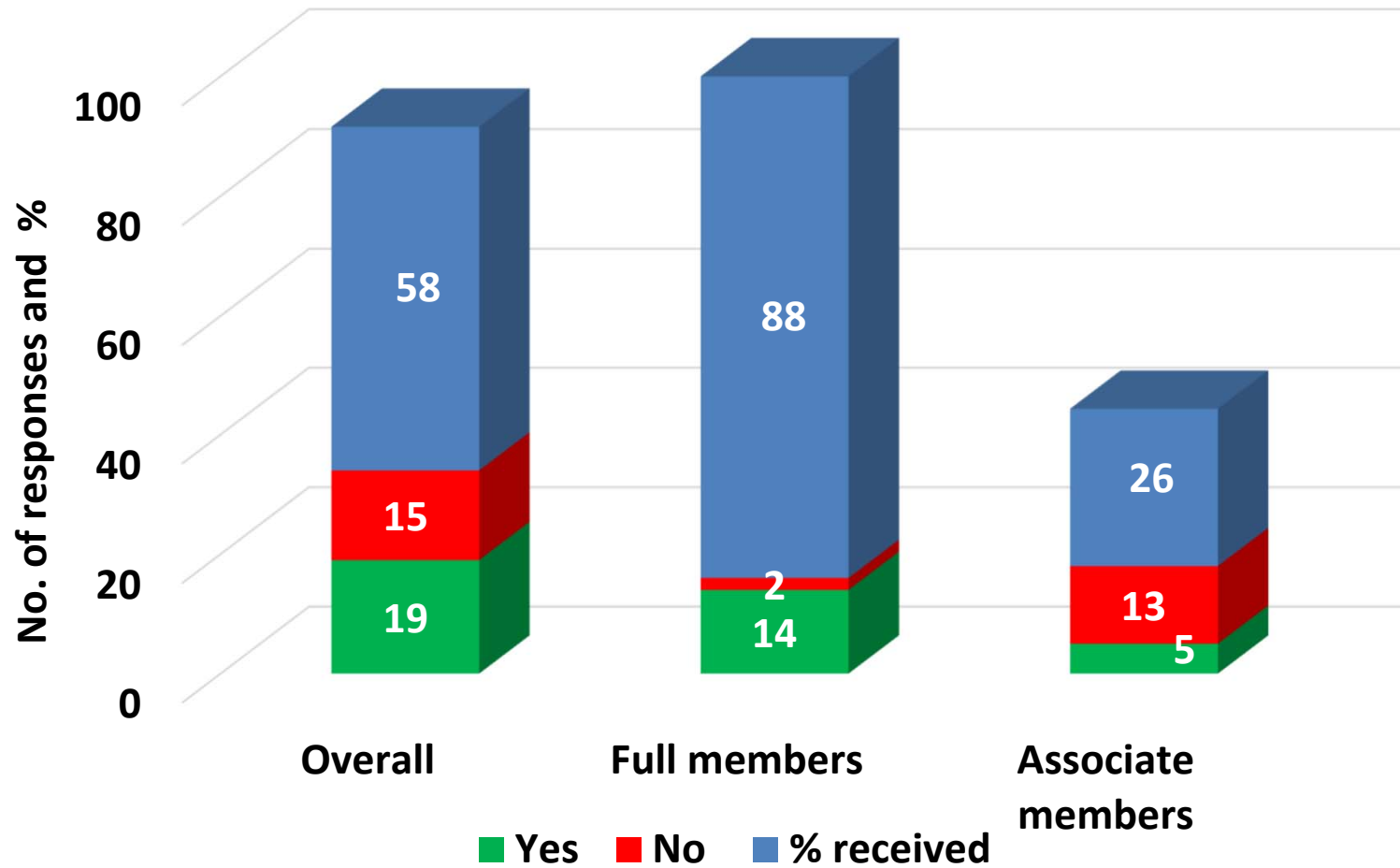
Future scope

Create opportunity for aspiring future companies in terms of their product and by-product exchange needs.





Response Survey





Industry Interactions

Year	1990	2002	2007	2013	2020
Participating industries	13	28	31	27	34
Existing interactions	27	106	145	158	172*
New interactions identified	-	79	39	13	21
*Interactions discontinued	Not studied	Not studied	Not studied	11	7
Future potential interactions	2	104	86	4	7

*Indicates verification required.

*** Data from the participating industries.**

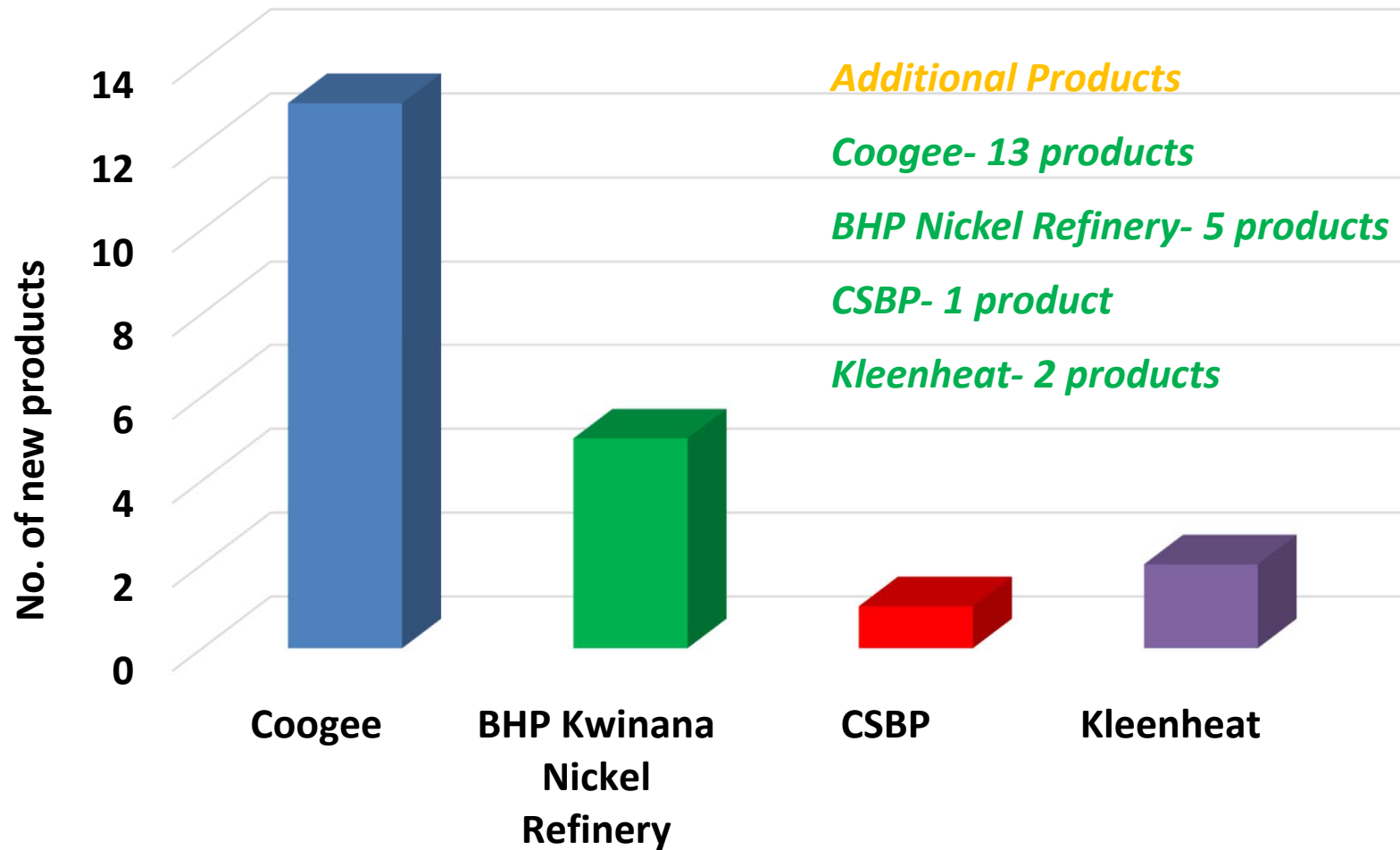
(source: SKM report, 2014)



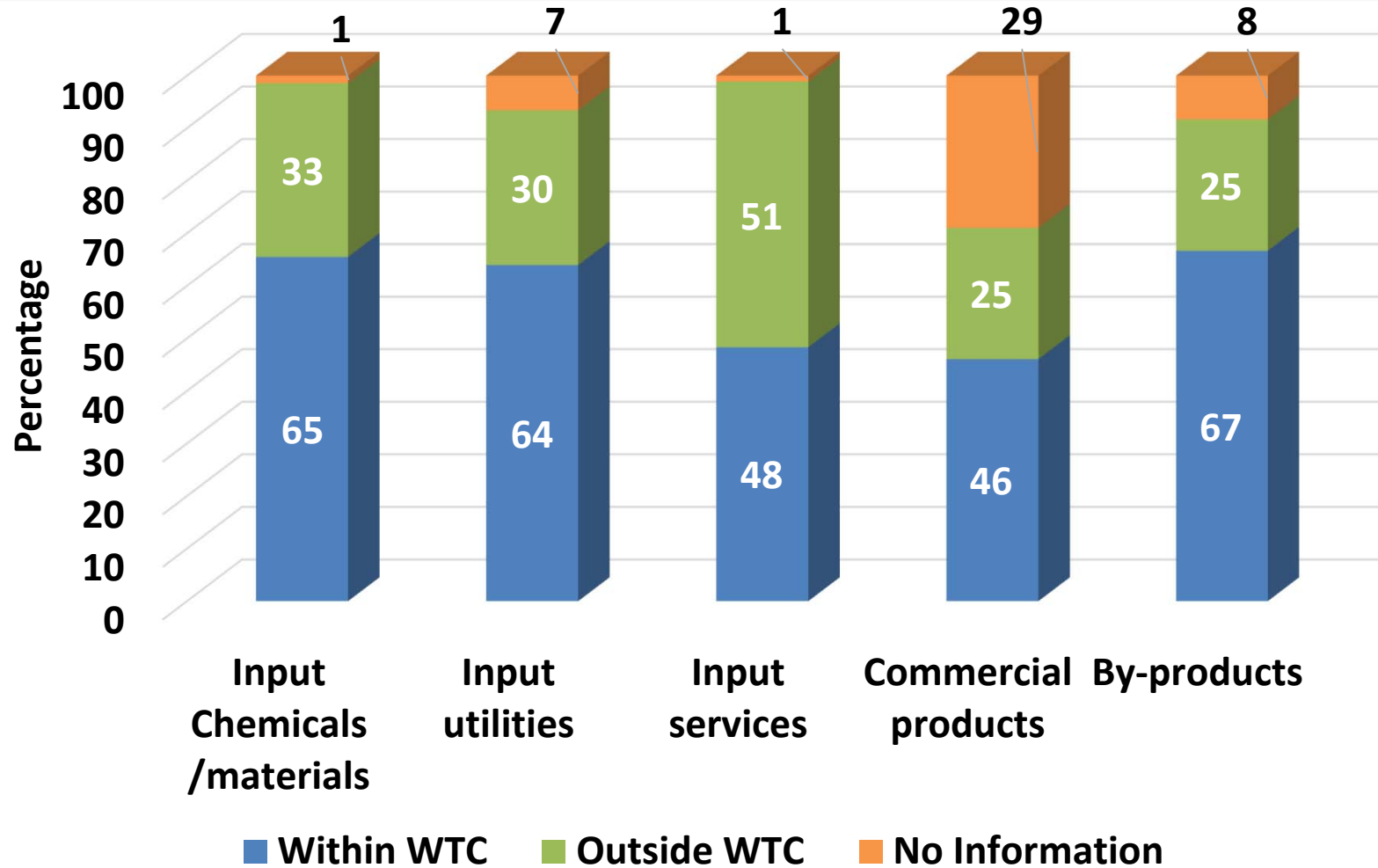
Survey questions: Product and by-product exchanges



New products after 2013 SKM report



Exchanges within and outside of WTC

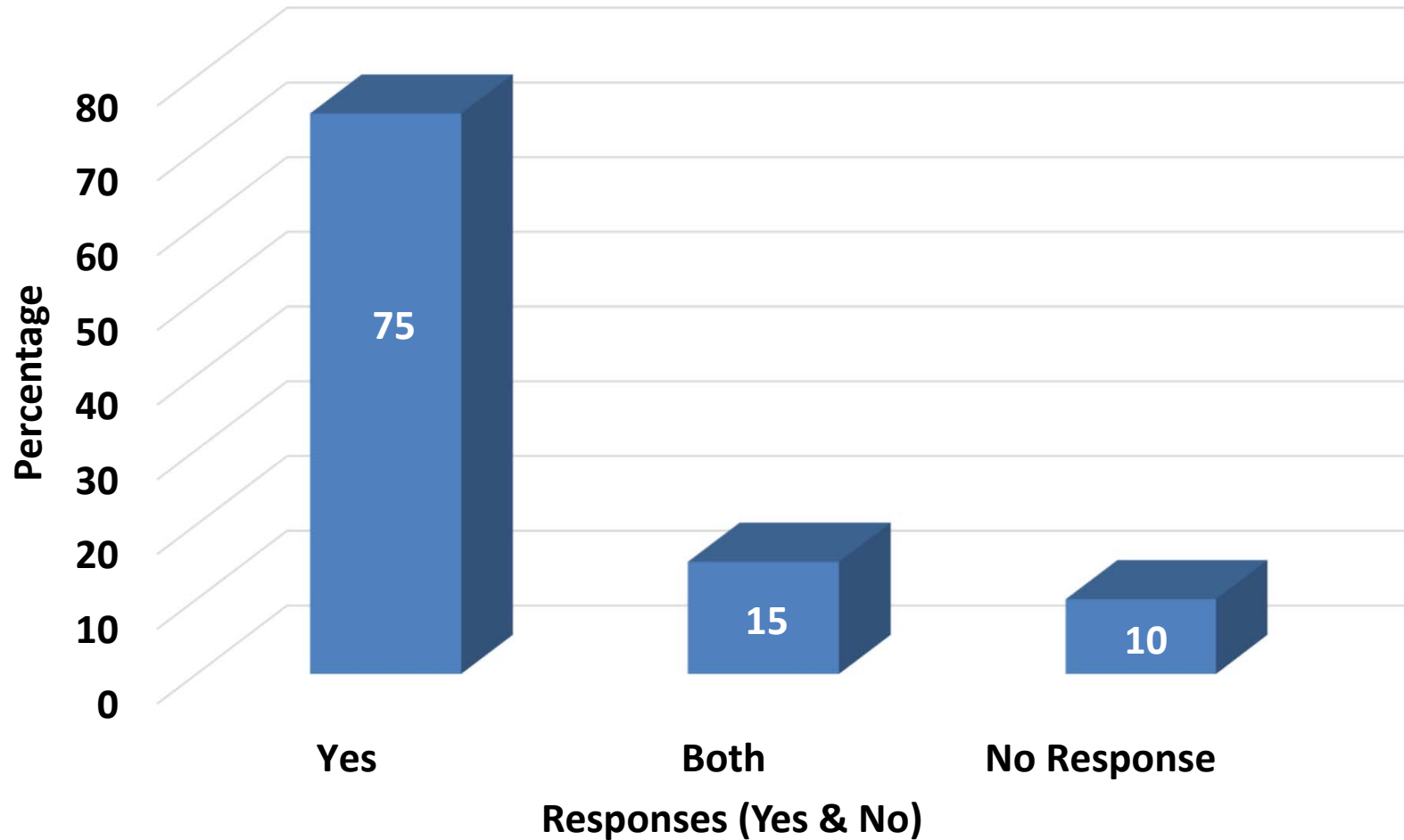




Survey questions: Workforce Characteristics

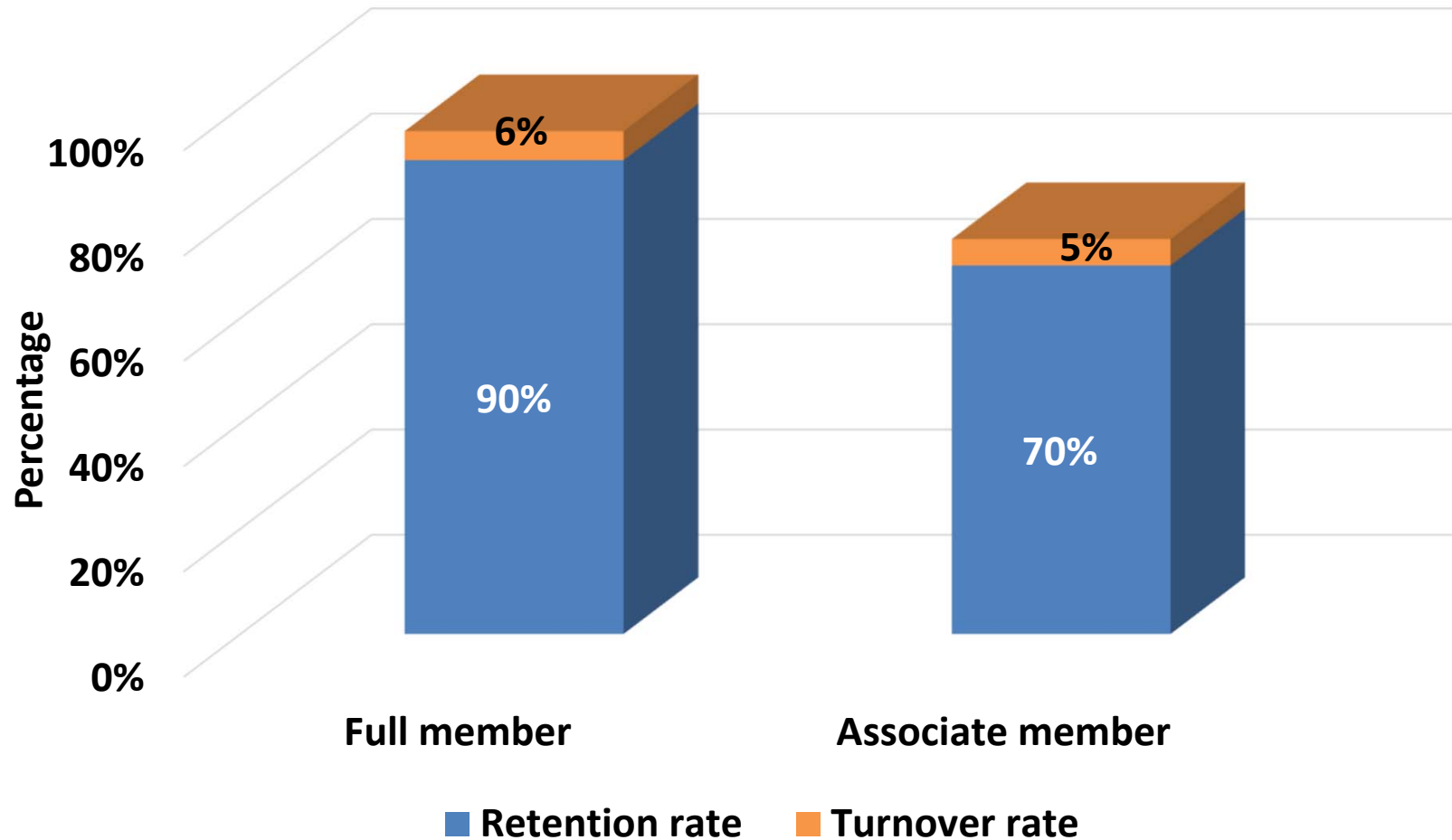


Preference of skilled workforce



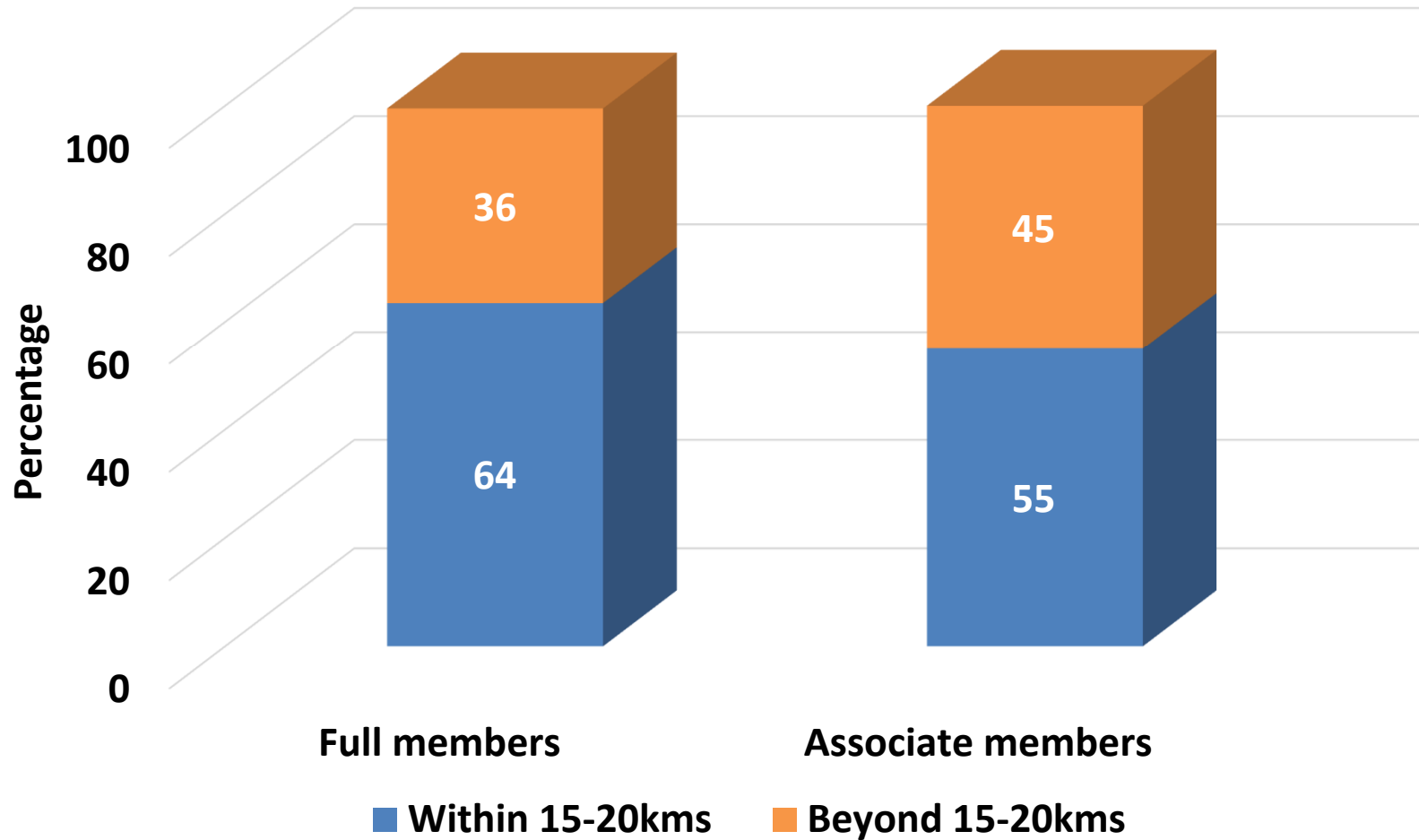


Average annual turnover and retention rate





Skilled workforce residence





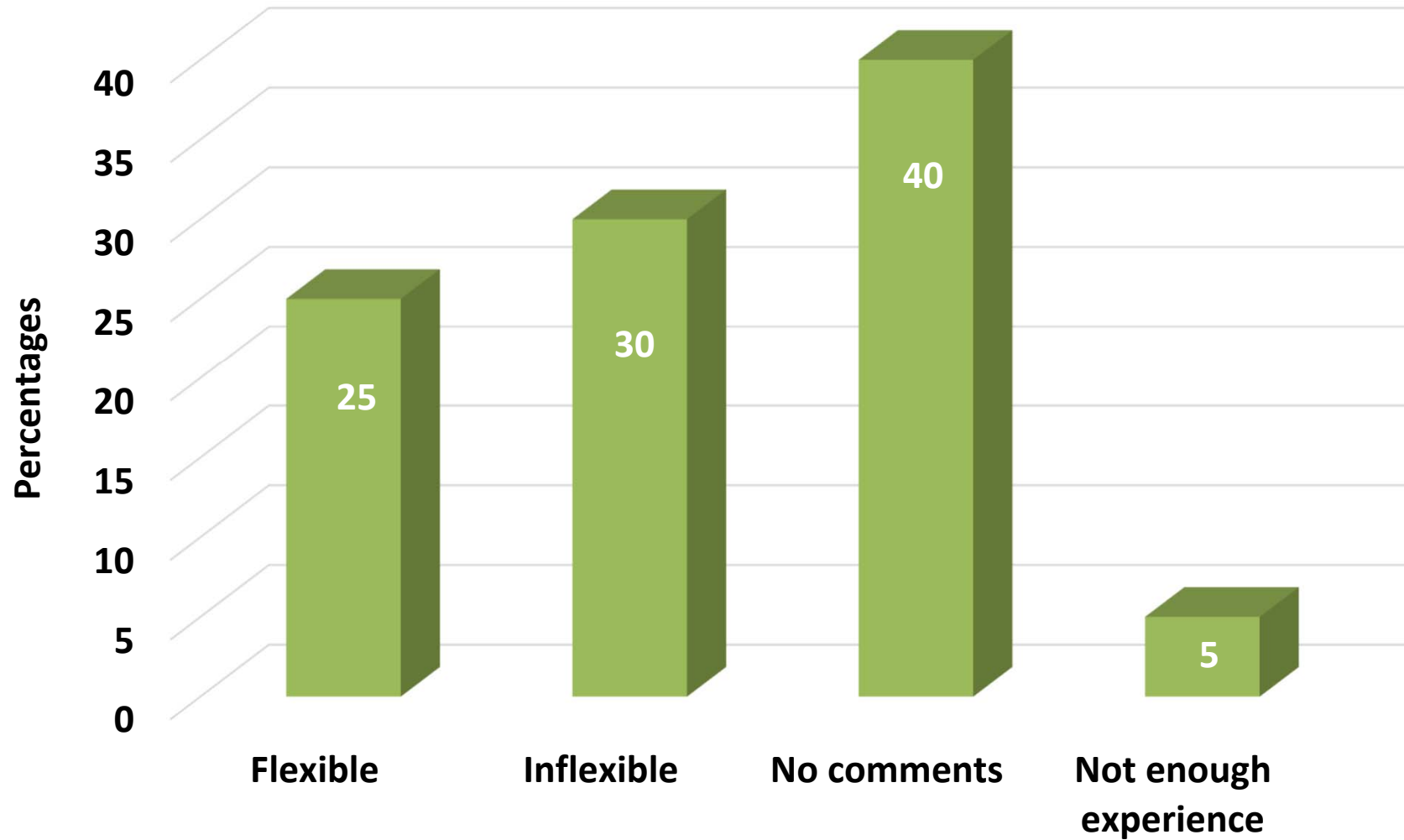
Survey questions: Support Industries



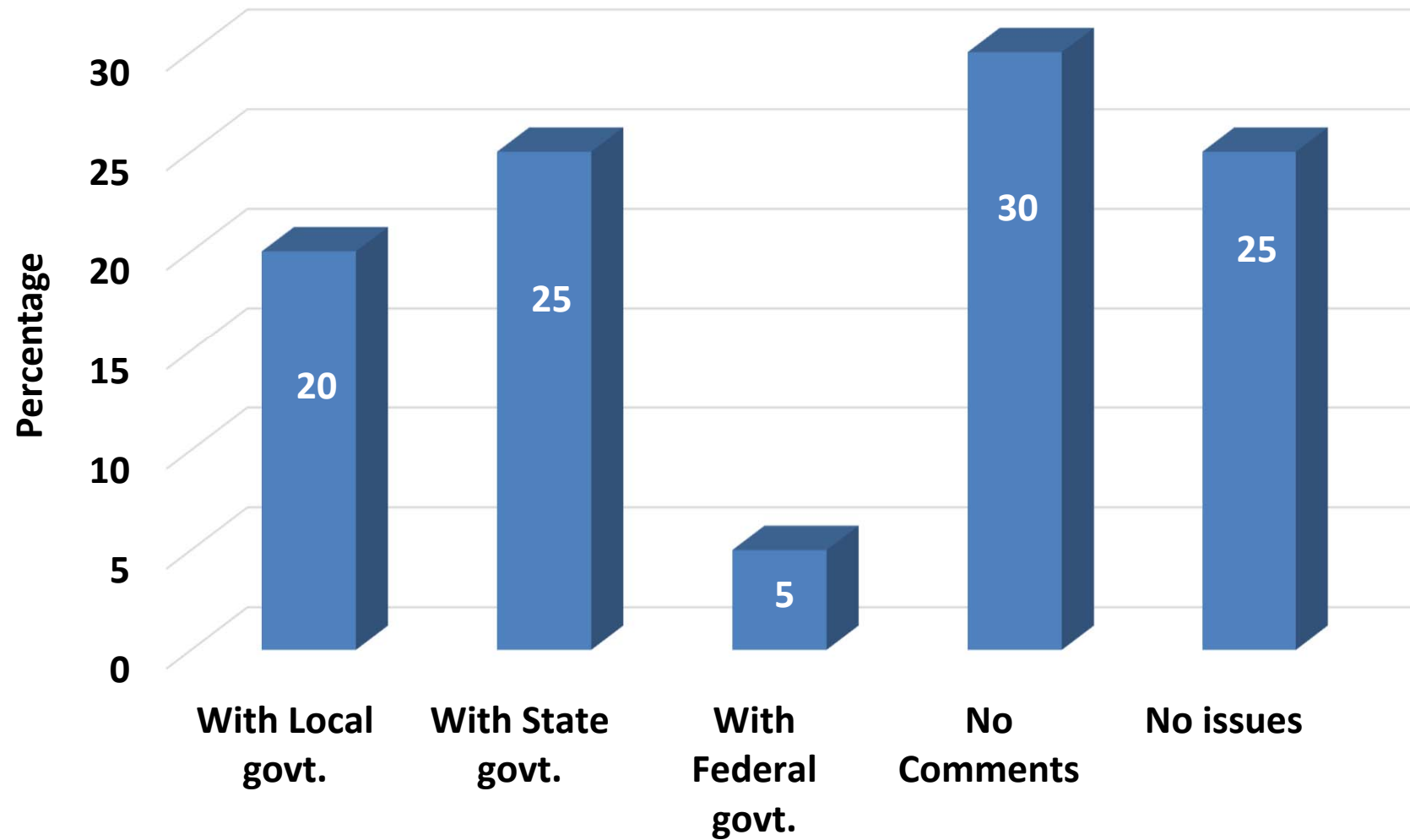
Survey questions: Governance



Flexible/ Supportive Legislative Framework (%)



Complexity (%)





Conclusions

- One of the best examples in the world of industrial symbiosis.
- Much information at KIC website at www.kic.org.au
- Product and by-product synergies are but one dimension of IS
- Others may include synergy benefits relating to:
 - The presence of a large and skilled workforce
 - The presence of a comprehensive cluster of support industries to service the primaries, and..
 - A facilitative public governance sector providing a clear and practical policy and regulatory framework for the primaries.



THANK YOU

Any Questions!!

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