

Metrology as a key player in Saudi vision 2030 implementation - great opportunities

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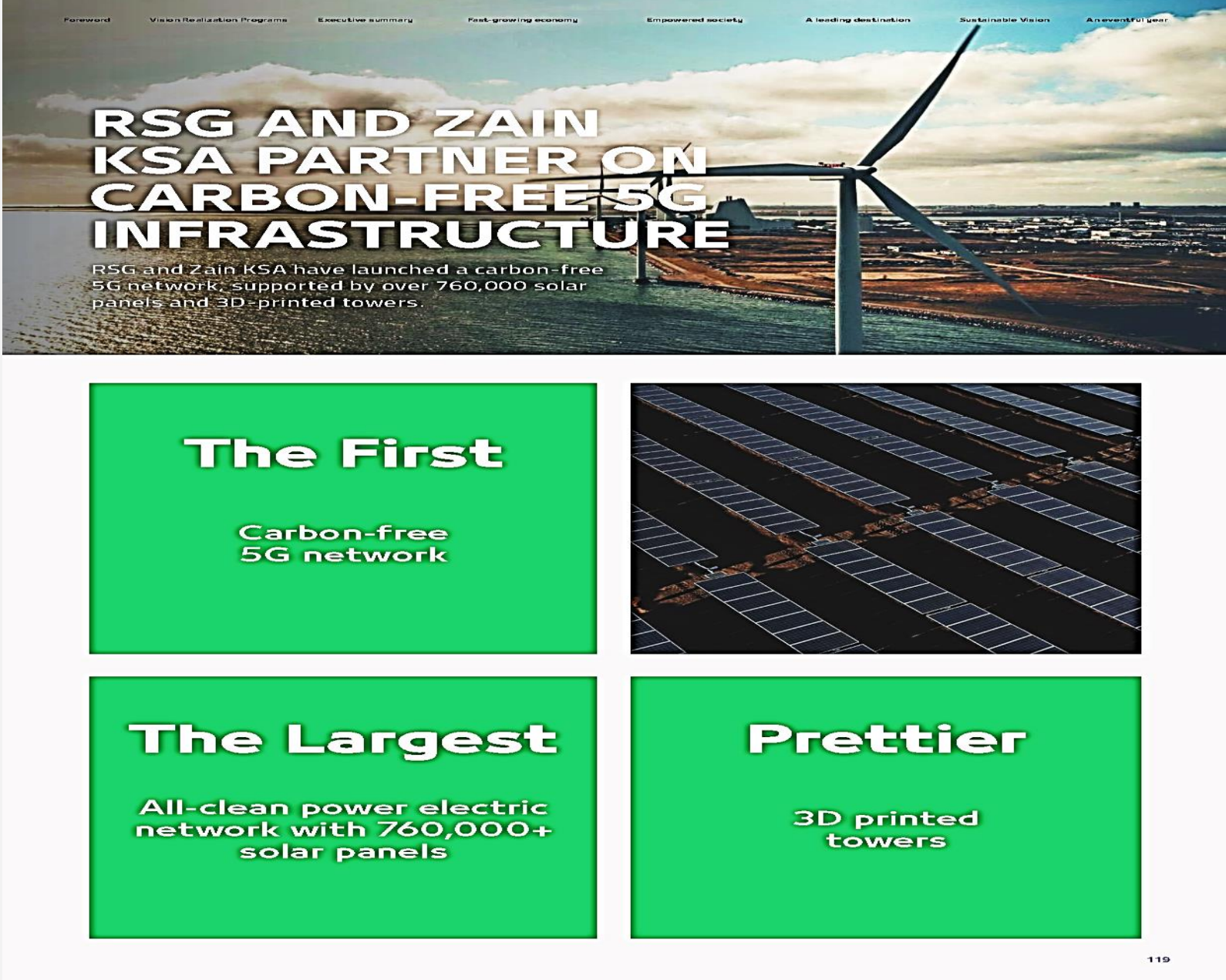
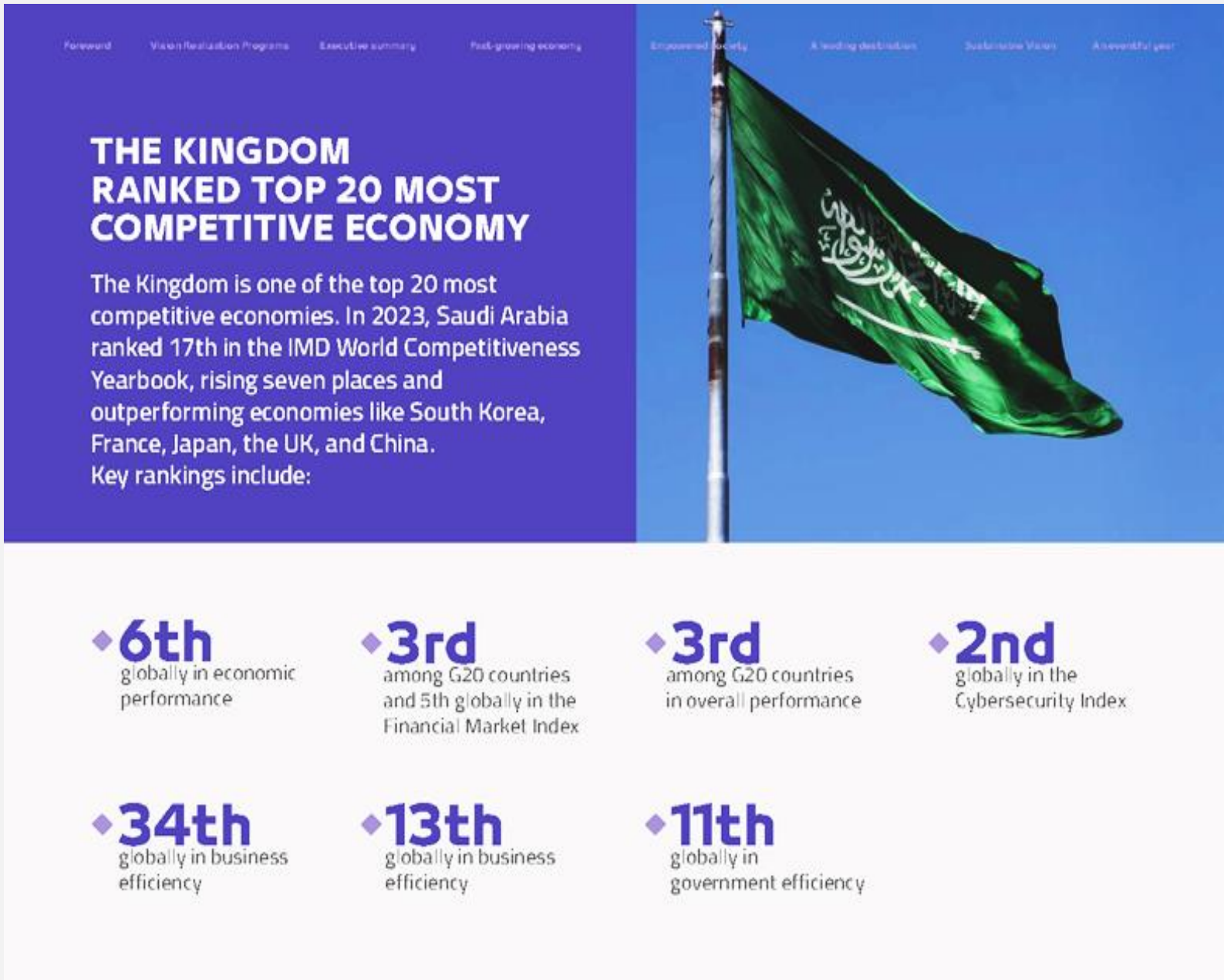
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Abstract

Saudi Vision 2030 aims to achieve economic diversification, technological innovation, environmental sustainability, and the growth of a knowledge-based society. Metrology plays a vital role in achieving these goals by ensuring precision, dependability, and uniformity in measurements across multiple industries.

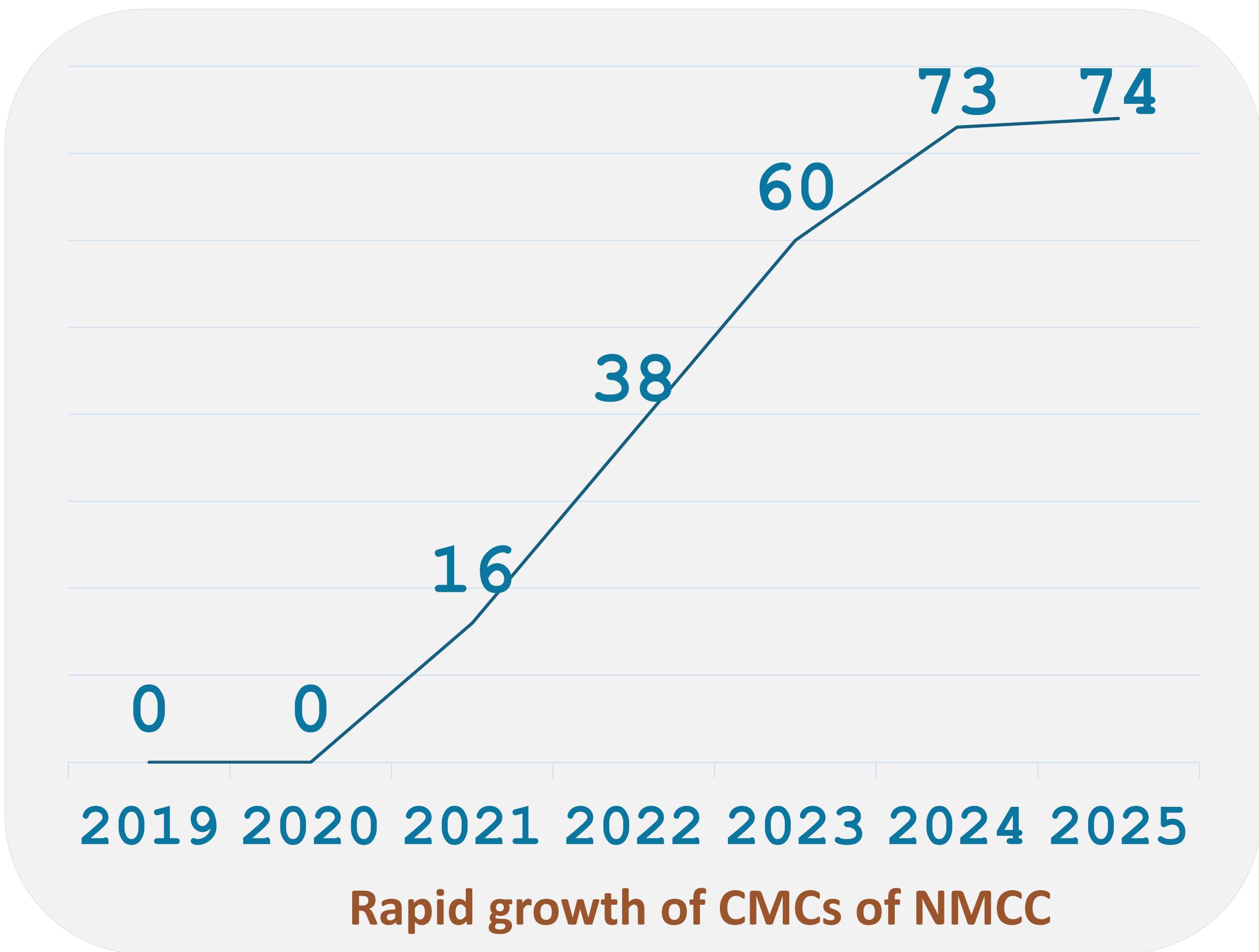
Renewable energy development is essential for Saudi Arabia to transition to clean energy and establish itself as a pioneer in clean energy. Accurate measurement and calibration of renewable energy equipment, such as solar panels, wind turbines, and energy storage systems, are necessary for optimal performance. Precision metrology is also crucial for promoting industrial diversification in sectors like aerospace, automotive, and advanced manufacturing.

Healthier public health is achieved through precise measurements in medical equipment, enhancing patient safety, diagnosis, and treatment. IoT metrology and smart cities are developed, with IoT-enabled metrology being used for water resource management, waste management, automated traffic systems, and smart grids.



Importance of Metrology for Saudi Vision 2030 - Examples

- ❑ Satellite technology and space exploration are supported by high-precision metrology to ensure the accuracy and performance of space-based equipment. Metrology can help with the development of sustainable agriculture practices and measuring carbon footprints.
- ❑ Precision agriculture through metrology is crucial for creating sustainable agricultural systems to provide self-sufficiency and food security. Accurate metrological data is essential for precision farming technology to boost productivity and cut waste. Transportation and logistics are enhanced through metrology, with precision and functionality of sensors and equipment in automobiles, traffic systems, and supply chains. Metrology training and capacity building are essential for developing workforce skills and human resources.
- ❑ Metrology can be promoted as a national strategy, enhancing Saudi Arabia's standing as an economic leader on a global scale. By utilizing cutting-edge measurement technologies and growing its metrology infrastructure, Saudi Arabia can ensure sustained economic progress and contribute to the country's future.



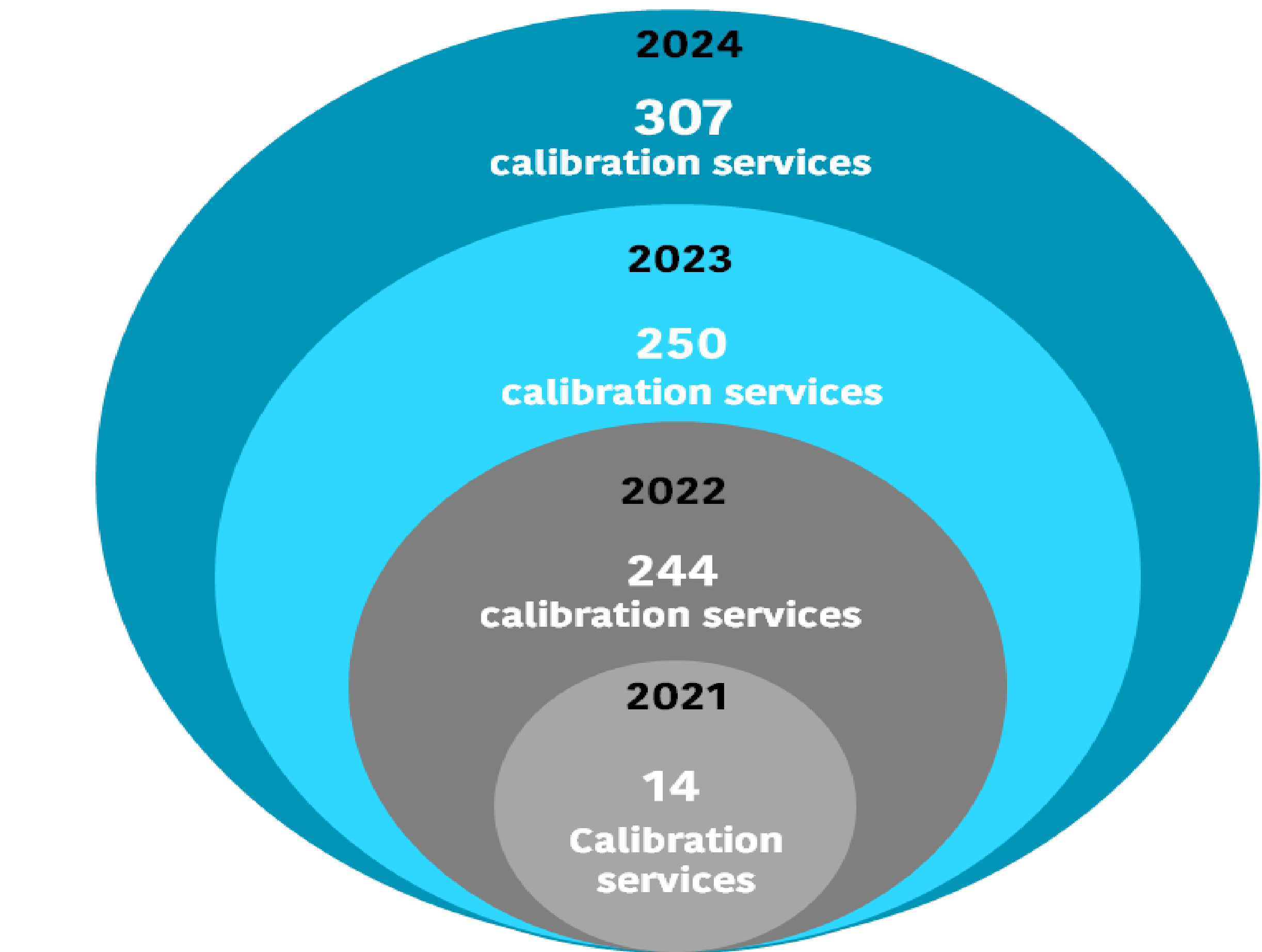
APPENDIX: RESULTS TABLES

The full results tables (up to the dimension level) are given for each country, as well as P-ranks for each country. The full data set is available <https://hub.unido.org/qi4sd/>

GENERAL INDEX

TABLE 15: Index and dimension scores for XL group

Country	Region	Rank	Index	Standards	Conformity	Metrology	Accreditation	Policy
China	East Asia & Pacific	1	94	88	92	96	94	100
France	Europe & Central Asia	2	89	83	81	92	100	91
Germany	Europe & Central Asia	3	85	85	83	100	100	57
United States	North America	4	85	72	78	90	100	
United Kingdom	Europe & Central Asia	5	82	85	70	92	100	62
Japan	East Asia & Pacific	6	81	84	50	94	94	
South Korea	East Asia & Pacific	7	79	82	56	83	96	
Italy	Europe & Central Asia	8	78	84	71	77	100	58
India	South Asia	9	75	70	57	65	100	84
Australia	East Asia & Pacific	10	75	50	61	81	94	86
Netherlands	Europe & Central Asia	11	74	77	38	81	100	
Spain	Europe & Central Asia	12	74	78	61	63	100	66
Canada	North America	13	71	61	34	73	92	96
Turkey	Europe & Central Asia	14	71	55	55	64	100	79
Saudi Arabia	Middle East & North Africa	16	64	54	49	44	79	95
Indonesia	East Asia & Pacific	18	61	38	31	39	96	100
Russia	Europe & Central Asia	19	60	78	16	90	46	70



Conclusion

In conclusion, technology is a crucial tool for accomplishing the objectives outlined in Saudi Vision 2030. Metrology will be essential for everything from enhancing industrial quality and precision to encouraging sustainability and creativity in space exploration, healthcare, and environmental monitoring. Saudi Arabia can establish itself as a world leader in accuracy, quality control, and scientific advancement by utilizing cutting-edge measurement technologies and growing its metrology infrastructure. This will help Vision 2030 to succeed and guarantee sustainable economic progress and improving quality of life of Saudi citizens as well as catching up with the digital era through rapid digital transformation of metrology.