



# Improving Quality Infrastructure in the OIC Member Countries

THE 23rd MEETING OF  
THE COMCEC  
TRADE WORKING  
GROUP

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**PRESENTATION  
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**CASE STUDIES**



**Kazakhstan**

**Senegal**

**United Arab Emirates**

**Italy**

**USA**



**COUNTRIES**





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Kazakhstan

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Senegal

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United Arab Emirates

**FIELD VISITS**

# Kazakhstan

- **Kazakhstan: A Case Study in NQI Modernization**
- **Leveraging NQI for Economic Transition in Kazakhstan**
- **Kazakhstan's NQI: A Model for Resource-Rich Economies**
- **The Role of NQI in Kazakhstan's Integration into Global Markets**
- **NQI and Economic Diversification: Lessons from Kazakhstan**
- **Supporting Industrial Growth through NQI in Kazakhstan**
- **Kazakhstan's NQI Journey: Implications for OIC Member States**
- **Global Trade and NQI: Kazakhstan's Path in the Eurasian Economic Union and WTO**



**C O U N T R I E S**



# Background

Kazakhstan's economic growth, driven by oil and gas, has strengthened its economy and global energy presence. To reduce energy dependence, the country is investing in infrastructure to diversify into agriculture, manufacturing, and services, aiming for long-term stability and broader economic development.



**KAZAKHSTAN  
FRAMEWORK**

# General Outlook

GQII 2023: Global Ranking and Subrankings				
Country	Global QI Index Rank 2023	Rank Metrology 2023	Rank Standardization 2023	Rank Accreditation 2023
Germany	1	2	2	2
China	2	3	1	6
United States	3	1	7	1
Ukraine	26	24	46	18
Kazakhstan	48	46	66	28
Russian Federation	50	26	17	105
Uzbekistan	67	80	80	39
Mongolia	73	75	78	61
Kyrgyz Republic	101	107	150	73
Tajikistan	166	145	163	165

Source: Global Quality Infrastructure Index

# General Outlook

GQII Global Ranking and Subrankings (comparison in years)				
Kazakhstan	Global QI Index Rank 2023	Rank Metrology 2023	Rank Standardization 2023	Rank Accreditation 2023
GQII 2023	48	46	66	28
GQII 2021	48	45	65	30
GQII 2020	49	44	65	25

Source: Global Quality Infrastructure Index

# General Outlook

	World	GDP: L	Income: Upper Middle	Europe-Central Asia
Kazakhstan	63	37	20	31

Source: Quality Infrastructure for Sustainable Development Index

Standards and Regulatory Technical Documents	Reference and Reference Equaipment	Verifications and Calibrations for Business Per Year
73.385	104	5.000

Source: Kazakhstan Institute of Standardization and Metrology



# Main Actors and Initiatives

- **Main Actors**

Kazakhstan Institute of Standardization and Metrology (KazStandard)

Committee of Technical Regulation and Metrology

- **Key Initiatives**

Modernization of Kazakhstan's national metrology system

Upgrading measurement standards to comply with international norms

Accreditation and oversight of laboratories for measurement accuracy

Economic diversification through quality infrastructure improvements

# Policies and Regulations

- **Standardization Law (183–VI ZRK, adopted on 5 October 2018)**
- **Law on Technical Regulation**
- **Law on Ensuring Measurement Unity**
- **Law on Accreditation in Conformity Assessment**



# Conclusion of Review

Raising Awareness of Quality Infrastructure in Kazakhstan: Progress and Challenges

Kazakhstan’s QI Awareness Initiatives: The Role of Kaz Standard and Technical Regulation Committee

Expanding QI Awareness Through Media Campaigns and Industry Conferences

Boosting QI Effectiveness with Increased Budget, Personnel, and Training

The Importance of Non-State Actors in Kazakhstan’s Quality Infrastructure Development

Collaborating with NGOs and Industry Associations to Enhance QI in Kazakhstan

Staff Development and Training: Key to Improving Standards Implementation in Kazakhstan

Strengthening Kazakhstan’s Competitiveness Through Quality Control and Product Safety

**KAZAKHSTAN  
FRAMEWORK**

# Senegal

**Examining Senegal's metrology system offers insights into challenges faced by developing nations in adopting standardized measurements. With a diverse economy and membership in ECOWAS, Senegal serves as a valuable case for understanding how National Quality Infrastructure (NQI) can be strengthened in resource-constrained environments, providing lessons for other OIC Members.**



**C O U N T R I E S**

# Background

- **Senegal's Economic Growth: Key Sectors Driving Success**
- **The Role of Agriculture in Senegal's Economic Development**
- **Infrastructure Investments: Boosting Senegal's Connectivity and Business Activity**
- **Peanuts, Cotton, and Rice: Agricultural Pillars of Senegal's Economy**
- **Diversifying Senegal's Economy through Tourism Expansion**
- **The Impact of Services and Construction on Senegal's Economic Resilience**
- **Government-Led Infrastructure Investments for Senegal's Economic Growth**
- **Strengthening Senegal's Economy Through Sectoral Diversification**





# General Outlook

GQII 2023: Global Ranking and <u>Subrankings</u>				
Country	GQII Rank 2023	Rank Metrology 2023	Rank Standardization 2023	Rank Accreditation 2023
Germany	1	2	2	2
China	2	3	1	6
United States	3	1	7	1
Nigeria	82	118	56	95
Ghana	100	91	75	130
Cote d'Ivoire	103	146	76	104
Senegal	<b>115</b>	<b>133</b>	<b>107</b>	<b>113</b>
Mali	126	148	117	129
Mauritania	157	148	149	153
Sierra Leona	160	148	154	152

Source: Global Quality Infrastructure Index

# General Outlook

GQII Global Ranking and <u>Subrankings</u> (comparion in years)				
Country	Global QI Index Rank 2023	Rank Metrology 2023	Rank Standardization 2023	Rank Accreditation 2023
GQII 2023	115	133	107	113
GQII 2021	118	128	100	124
GQII 2020	112	127	104	110

Source: Global Quality Infrastructure Index

# General Outlook

	World	GDP: M	Income: Lower Middle	SSA	African Union
SENEGAL	112	46	27	20	24

Source: Quality Infrastructure for Sustainable Development Index

Number of Standards	555
Electronics	67
Construction and Civil Engineering	95
Food Processing	163
Environment	58
Administration and Trade	4
Solar Energy	20
Other	148

Source: USA Department of Commerce

# Main Actors and Initiatives

- **Main Actors**

Commissioners for Economic Investigations (Commissaires aux Enquêtes Économiques)

Association Sénégalaise de Normalisation (ASN)

Ministry of Commerce

- **Key Initiatives**

Implementation of Senegal's National Quality Policy (NQP)

National Quality Prize (National Quality Oscar)

National Standardization Strategy

Human Capital Development

Strengthening QI through Partnerships

Regulation of Legal Metrology

Audits and Compliance Investigations

# Policies and Regulations

- ECOWAS Quality Policy (ECOQUAL)
- ECOWAS Regional Quality Infrastructure Scheme (Regulation C/REG.19/12/13)
- Senegal National Quality Policy (NQP) (Decree 461–2017)
- Construction Standards and Enforcement
- Pending Legislation on QI and Metrology



# Conclusion of Review

The Importance of a National Metrology Institute for Senegal's Development

Enhancing Measurement Accuracy and Reliability through International Standards in Senegal

The Role of Metrology in Supporting Scientific Research and Economic Growth in Senegal

Overcoming Budget Challenges to Boost Senegal's Metrology and Quality Infrastructure

Improving Staff Training and Equipment to Strengthen Senegal’s Metrology Capabilities

Modernizing Senegal's Legal Metrology Framework for Innovation and Efficiency

Aligning National Metrology Standards with Global Norms: A Path for Senegal

Addressing Personnel Shortages in Senegal's QI and Metrology Institutions

# United Arab Emirates

- The UAE's National Quality Infrastructure: A Pillar of Economic Growth
- Driving Global Competitiveness Through the UAE's NQI
- Standardization and Innovation: The Core of UAE's Quality System
- Abu Dhabi Quality and Conformity Council (QCC): Leading the UAE's NQI Efforts
- Over 23,000 Standards: The UAE's Commitment to Quality and Safety
- Boosting International Trade Competitiveness with the UAE's NQI
- Strengthening Product Quality and Market Credibility in the UAE through Metrology and Accreditation
- The UAE's NQI: A Model for MENA Region's Economic Development



**C O U N T R I E S**

# Background

- **The UAE's Transformation: From Oil Dependency to Economic Diversification**
- **Key Sectors Driving the UAE's Economic Dynamism: Tourism, Real Estate, and Financial Services**
- **Strategic Infrastructure Investments Positioning the UAE as a Global Trade Hub**
- **Dubai and Abu Dhabi: Leaders in the UAE's Economic Growth and Innovation**
- **Foreign Direct Investment (FDI) and the UAE's Global Economic Attractiveness**
- **Building a Knowledge-Based Economy: The UAE's Focus on Innovation and Technology**
- **The UAE's Role as a Regional Powerhouse in Trade and Tourism**
- **Fostering a Business-Friendly Environment: The UAE's Path to Economic Success**

# General Outlook

GQII 2023: Global Ranking and <u>Subrankings</u>				
Country/City	GQII Rank 2023	Rank Metrology 2023	Rank Standardization 2023	Rank Accreditation 2023
Germany	1	2	2	2
China	2	3	1	6
USA	3	1	7	1
UAE (Dubai)	26	21	18	30

Source: Global Quality Infrastructure Index

# General Outlook

GQII Global Ranking and <u>Subrankings</u> (Comparison in Years)				
Country/City	Global QI Index Rank 2023	Rank Metrology 2023	Rank Standardization 2023	Rank Accreditation 2023
GQII 2023	26	21	18	30
GQII 2021	30	25	20	35
GQII 2020	35	28	22	38

Source: Global Quality Infrastructure Index

# General Outlook

World	GDP: H	Income: High	Middle East	GCC
UAE	30	5	2	1

Source: Quality Infrastructure for Sustainable Development Index



# Main Actors and Initiatives

- **Main Actors**

Emirates Authority for Standardization and Metrology (ESMA)

Emirates Metrology Institute (EMI)

Dubai Municipality

- **Key Initiatives**

UAE Quality Mark (ESMA Initiative)

National Standards Development (ESMA Initiative)

Calibration Services (EMI Initiative)

Consumer Protection through Legal Metrology (Dubai Municipality Initiative)

# Policies and Regulations

- Federal Law No. 28 of 2001 (Conformity Assessment Law)
- Cabinet Decision No. 31 of 2006
- Ministerial Decree No. 85 of 2013
- Dubai Municipality's Local Order No. 11 of 2003
- Federal Law No. 2 of 2021 (Consumer Protection Law)
- Federal Law No. 24 of 1999 (Environmental Protection and Development Law)
- Federal Law No. 6 of 2013 (Metrology Law)
- Regulation C/REG.19/12/13 (Gulf Standardization Organization – GSO)
- ECOWAS Quality Policy (ECOQUAL) and Implementation Framework
- Gold Trade Regulations (DGCX – Dubai Gold & Commodities Exchange)



# Conclusion of Review

The UAE's National Quality Infrastructure: A Pillar for Global Trade and Innovation

Enhancing Public Awareness and Integration of Advanced Technologies in the UAE’s NQI

Establishing a National Metrology Institute: A Milestone in the UAE’s NQI

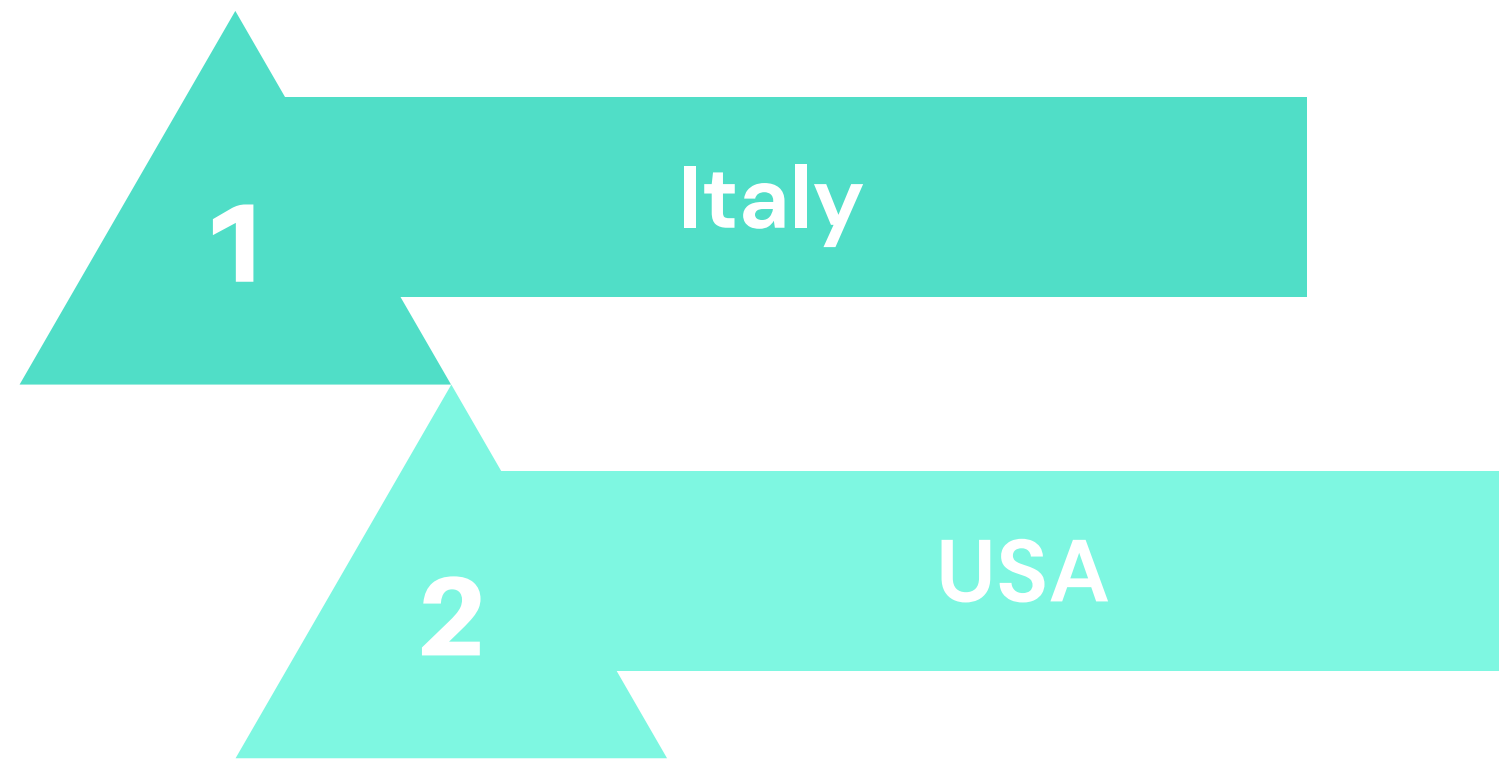
Challenges Facing the UAE’s NQI: Technology Integration and Personnel Shortages

Modernizing the UAE’s Legal Metrology System for Continued Progress

Funding and Training: Key Areas for Advancing the UAE’s NQI

The Role of the UAE’s NQI in Supporting Vision 2030 and Economic Growth

The UAE’s NQI as a Model for OIC Member States



**DESK RESEARCH**

# Italy

- **Italy's National Quality Infrastructure: A Model for Product Safety and Sustainability**
- **Studying Italy's NQI: Lessons in Compliance with International Standards**
- **The Role of Italy's NQI in Supporting Innovation and High-Value Industries**
- **Balancing National Standards and EU Directives: Italy's Approach to NQI**
- **Italy's NQI in Traditional and Modern Sectors: A Competitive Global Strategy**
- **The Complexity of NQI in a Multinational Context: Italy's Integration within the EU**
- **How Italy's NQI Promotes Quality and Innovation in a Globalized Economy**
- **Italy's Legal Framework and Institutions: Best Practices for Strong NQI Systems**



**C O U N T R I E S**



# Background

- **Italy: A Major Economic Power in the European Union**
- **The Industrial Strength of Northern Italy: Lombardy and Veneto as Manufacturing Hubs**
- **Italy's Global Impact as a Leading Exporter of High-End Goods**
- **Key Sectors in Italy's Economy: Manufacturing, Fashion, and Automotive Industries**
- **The Role of Tourism, Banking, and Retail in Italy's Economic Success**
- **Challenges Facing Italy: High Public Debt and Unemployment**
- **Innovation and Quality: Pillars of Italy's Economic Resilience**
- **Italy's Export Powerhouse: Machinery, Chemicals, and Processed Food**



# General Outlook

Country	Sum of Total Certificates	Participation in Technical Committees	2023 GQII Ranking
Italy	138.487	709	6

Source: Global Quality Infrastructure Index

# Main Actors and Initiatives

- **Main Actors**

National Metrology Institute of Italy (INRIM)

Italian National Agency for New Technologies, Energy, and Sustainable Economic Development (ENEA)

Italian Institute for Quality Branding (IMQ)

Italian Society of Metrology (SIM)

Politecnico di Milano and Other Academic Institutions

- **Key Initiatives**

Quantum Metrology Initiative

Nano-Metrology Initiative

Environmental Metrology Project

# Policies and Regulations

- Legislative Decree No. 273/1991
- Legislative Decree 22/2007 (Updated in 2016)
- Legislative Decree No. 206/2005
- Legislative Decree No. 126/2010
- Law No. 132/2001
- European Metrological Directive 2014/32/EU
- Food Safety Regulations (Post-2008 Mozzarella Scandal)



# Conclusion of Review

The Vital Role of Metrology in Italy’s Key Sectors

Ensuring Quality and Safety Through Precision Measurement in Italy

Italy’s Participation in International Metrology: Strengthening Competitiveness

The Future of Metrology in Italy: Innovations in Nano-Metrology and Digital Metrology

Metrology in Healthcare and Environmental Monitoring: Italy’s Approach

Challenges in Italian Metrology: Technology Integration and Research Funding

Education and Training: Sustaining Italy’s Expertise in Metrology

Metrology in Italian Industry: From Automotive to Fashion



# USA

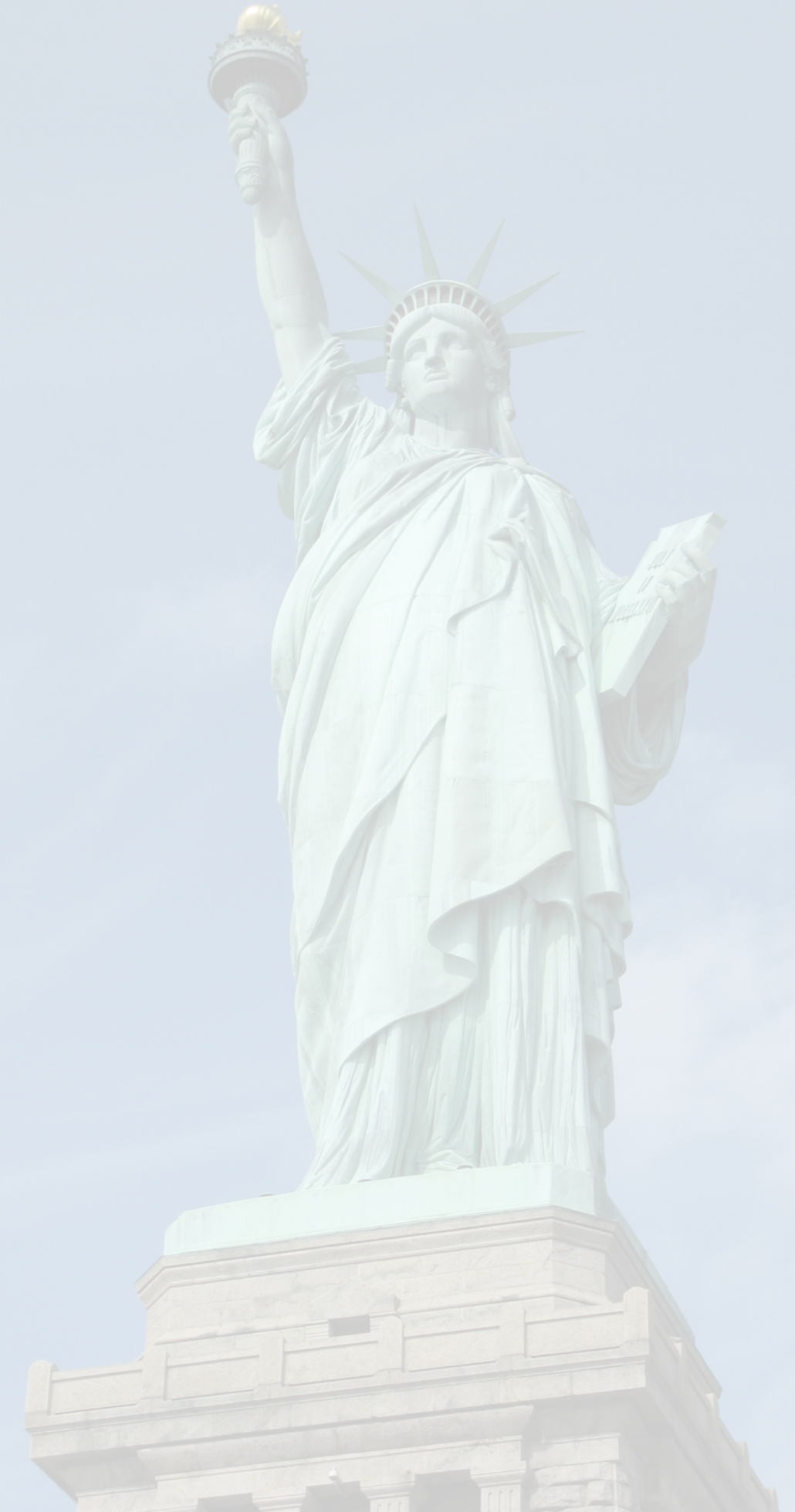
- The U.S. National Quality Infrastructure: A Global Leader in Innovation
- How the U.S. NQI Supports Technology, Finance, and Healthcare Sectors
- Standardization, Accreditation, and Certification: Pillars of the U.S. NQI System
- Public–Private Partnerships in the U.S. NQI: Enhancing Quality and Regulatory Frameworks
- Integrating Cutting–Edge Technology: The U.S. NQI’s Contribution to Economic Leadership
- Fostering Innovation and Ensuring Consumer Safety Through the U.S. NQI
- The Role of the U.S. NQI in Global Trade and International Agreements
- Balancing Regulation and Innovation: Lessons from the U.S. NQI System



**COUNTRIES**

# Background

The US leads in global trade and finance; therefore, its economic policy and performance have profound effects on international markets. Despite facing challenges such as economic inequality and economic downturns, the U.S. economy is strong and resilient and continues to attract heavy investment from outside its borders. Its innovation-driven growth, alongside a vibrant labor market, keeps it very much at the forefront of global economic leadership.



# General Outlook

Country	Sum of Total Certificates	Participation in Technical Committees	2023 GQII Ranking
USA	40.796	565	3

Source: Global Quality Infrastructure Index

# General Outlook

US Standards in Numbers (Estimate)	
Total Inventory of Standards	100.000
Standards Coming From Private Sector	50.000
Distinct Statutes, Technical Regulations or Purchasing Specifications	44.000
Standards Organizations	600

Source: International Organization for Standardization

# Main Actors and Initiatives

- **Key Initiatives**

NIST Quantum Measurement Initiatives

NIST-on-a-Chip Program

Smart Manufacturing Systems (NIST)

ANSI Standards Collaborative

A2LA Laboratory Accreditation Initiatives

NCWM Device Standardization

NCWM Professional Development

- **Main Actors**

National Institute of Standards and Technology (NIST)

American National Standards Institute (ANSI)

American Association for Laboratory Accreditation (A2LA)

National Conference on Weights and Measures (NCWM)

International Bureau of Weights and Measures (BIPM)

# Policies and Regulations

- **Weights and Measures Act of 1966**
- **NIST Act of 1988**
- **National Technology Transfer and Advancement Act (NTTAA) of 1995**
- **Environmental Protection Laws (Volkswagen Emissions Scandal)**
- **Automotive Safety Regulations (General Motors Ignition Switch Case)**



# Conclusion of Review

The U.S. Role in Global Metrology: Setting Benchmarks and Driving Standards

Balancing Global Metrology Leadership with Innovation and Accessibility

Quantum Computing and Biotechnology: Opportunities for U.S. Metrology System

Addressing Market Concentration and Competition in the Context of U.S. Standards

Emerging Technologies and the Need for New U.S. Metrology Standards

Challenges of the U.S. Regulatory Environment: Inconsistencies and Compliance Costs

Resource Allocation and Budgetary Pressures on U.S. Metrology Innovation

Impact of U.S. Standards Dominance on Smaller Companies and Developing Countries

# Thanks for your participation



**COMCEC COORDINATION OFFICE**  
**Ankara, Türkiye**

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