Partnerzy projektu: IETU aquateam COWI Gdańska Fundacja Wody

Facilitating the use of ETV to increase energy efficiency in water sector

Environmental technology verification (ETV) as a tool for creating a level playing field for greater market acceptance of innovative technologies for water sector

Izabela Ratman-Kłosińska, ETV4Water Project Coordinator
Environmental Technology Verification Body IETU

Workshop:
How to verify the performance of an innovative, energy efficient technology for wastewater sector under the EU ETV Programme
Aquateam COWI, 23.10.2017, Oslo, Norway

Norway grants

Project **Facilitating the use of ETV to improve Energy efficiency in water sector** has received funding from Norway Grants 2009-2014 in the frame of the Bilateral Cooperation Fund on the level of the Operational Programme PL04

What is ETV?

Environmental technology verification (ETV)

is the only globally recognised process providing independent and credible information on new environmental technologies, by verifying that performance claims are complete, fair and based on reliable test results.

„It does what it says on the tin”

ETV vs certification

- ETV is not a certification system:
  - it is not based on a pre-defined set of criteria
  - it does not give a pass-or-fail judgment on the performance of technologies
- ETV does not aim to substitute existing regulatory or voluntary systems such as type-approval or labels.
  - The aim is to fill a gap for those technologies falling outside regulations or standards and for innovations which do not fit into existing legislative, labelling or standards frameworks.
- ETV will not substitute the actual testing of a new technology, but will review test results in order to assess the veracity of the performance claim
- ETV is concerned with the technical design of a technology, not with the production series of industrial products

Finansowanie projektu: Norway grants
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Challenges for water and Innovations

Challenges:

- water deficit
- climate change
- circular economy (wastewater a resource, wastewater treatment plant as a resource manager)
- NEW concept (nutrients-energy-water)
- new risks/substances in water

Innovations that: :

- help achieve better water quality
- Improve energy efficiency of water sector
- reduce water consumption
- foster water reuse, recycle, cascading
- enable recovery of valuable materials and ensure their quality (phosphorus, nitrogen, bioplastics, other)
- minimize the negative impact of technological process on the environment
- help better measure parameters that indicate impact on the environment

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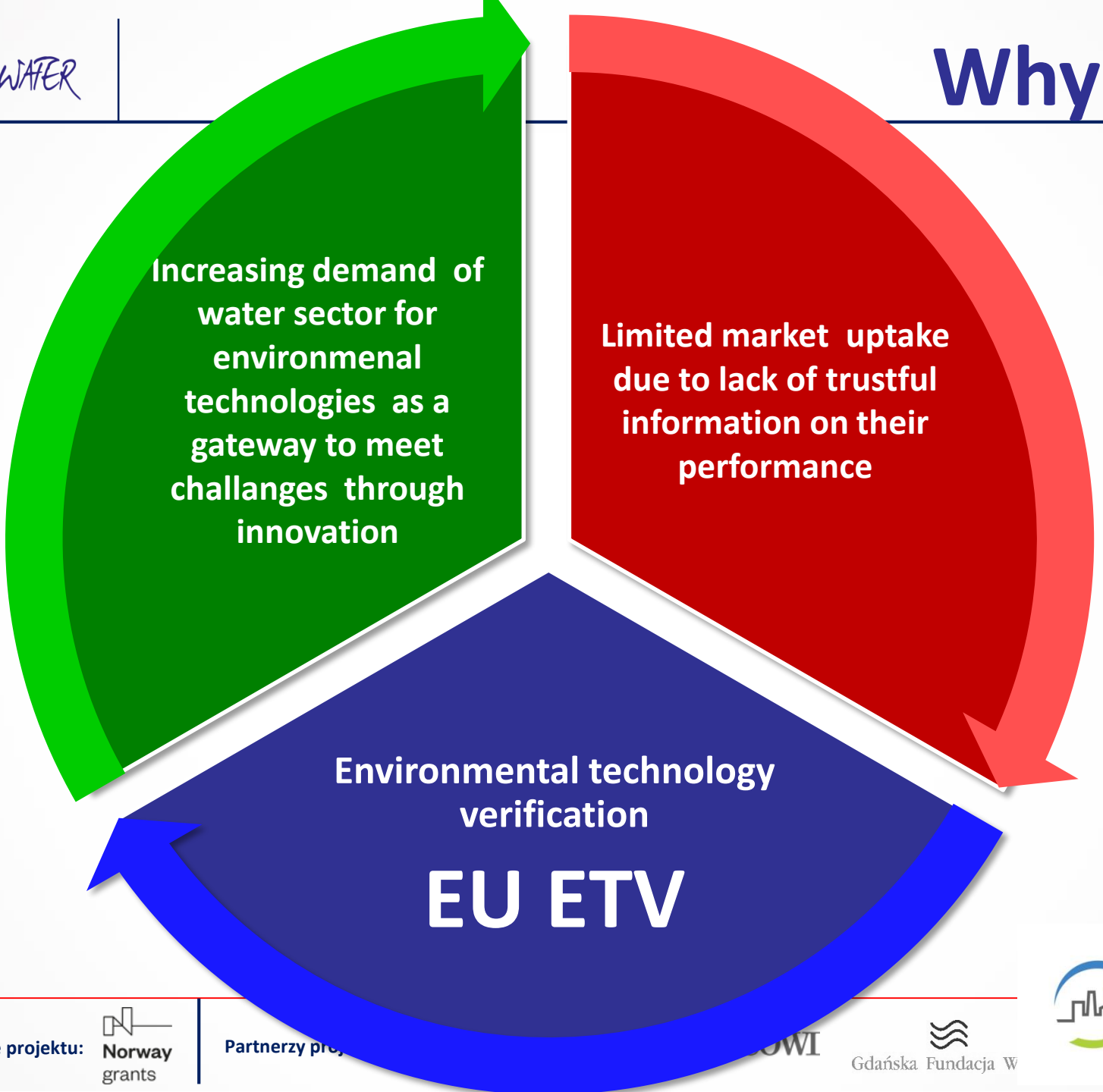
Facts and figures

- ***11%*** **of purchasers trust producers' claims**
- ***57%*** **would ask for evidence backing-up the claims**
- ***26%*** **consider they have no way of checking**

EC Public consultation on ETV

Why ETV?



Finansowanie projektu: Norway grants

Partnerzy pro

Gdańska Fundacja W

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ETV objectives

- **Increase the trust** of investors in innovative environmental technologies
- **Give more credibility** to developers of innovative technologies
- **Enable** technology users **to benefit from innovation and select technologies** meeting their needs
- **Reduce financial and technological risk** for investors and purchasers investing in new technologies
- **Facilitate or accelerate the diffusion** of innovative technologies **on** national, EU and international **markets**

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What ETV consist in?

Credibility

Factual approach

Recognition

Completeness

Flexibilty

ETV consists in providing third party evidence that a specific environmental technology achieves a **declared performance** (technical/functional) and resulting **environmental benefits**:

- for a specific application
- under specific operational conditions
- taking into account all measurement uncertainities and other assumptions.

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Which technologies?

✓ready for market or already available on the market
✓innovative compared to technologies currently applied in similar situation

measure parameters that indicate environmental impacts
e.g. technologies for monitoring water quality

- **Monitoring of water quality for microbial and chemical contaminants**
  (e.g. test kits, probes, analysers)

Water technologies

demonstrate environmental added value i.e. more beneficial or less adverse environmental impact
e.g. water treatment technologies

- **Treatment of drinking water for microbial and chemical contaminants**
  (e.g. filtration, chemical disinfection, advanced oxidation)
- **Desalination of seawater**
- **Treatment of wastewater for microbial and chemical contaminants**
  (e.g. separation techniques, biological treatment, electrochemical methods, small-scale treatment systems for sparsely populated areas)

Which water technologies?

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Water technologies (ETV Body IETU accreditation scope)

measure parameters that indicate environmental impacts
e.g. technologies for monitoring water quality

demonstrate environmental added value i.e. more beneficial or less adverse environmental impact
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- **Monitoring of water quality for microbial and chemical contaminants**
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- **Treatment of drinking water for microbial and chemical contaminants** *(e.g. filtration, chemical disinfection, advanced oxidation)*
- **Desalination of seawater**
- **Treatment of wastewater for microbial and chemical contaminants** *(e.g. separation techniques, biological treatment, electrochemical methods, small-scale treatment systems for sparsely populated areas)*
- **Treatment of industrial wastewater**

Which other technologies?

✓ready for market or already available on the market
✓innovative compared to technologies currently applied in similar situation

Energy technologies

- **Production of heat and power from renewable sources of energy** (e.g. wind, sea, geothermic and biomass)
- **Reuse of energy from waste, biomass or by-products** (e.g. 3rd generation biofuels and combustion technologies)
- **Generic energy technologies** (e.g. micro-turbines, hydrogen and fuel cells, heat pumps, combined heat and power production, heat exchangers), distribution, energy storage
- **Energy efficiency in industrial processes and in buildings** (e.g. thermal envelope, wall insulation, energy efficient windows, heating, ventilation and air conditioning systems)

Which other technologies?

✓ready for market or already available on the market
✓innovative compared to technologies currently applied in similar situation

Materials, waste and resources

- **Recycling of industrial by-products and waste into secondary materials, recycling of construction waste into building materials** (e.g. reworking o bricks), recycling of agricultural waste and by-products for non-agricultural purposes
- **Improved resource efficiency through material substitution**
- **Separation or sorting techniques for solid waste** (e.g. reworking of plastics, mixed waste and metals), materials recovery
- **Recycling of batteries, accumulators and chemicals** (e.g. metal reworking technologies)
- **Reduction of mercury contamination from solid waste** (e.g. separation, waste mercury removal and safe storage technologies)
- **Products made of biomass** (health products, fiber products, bioplastics, biofuels, enzymes)

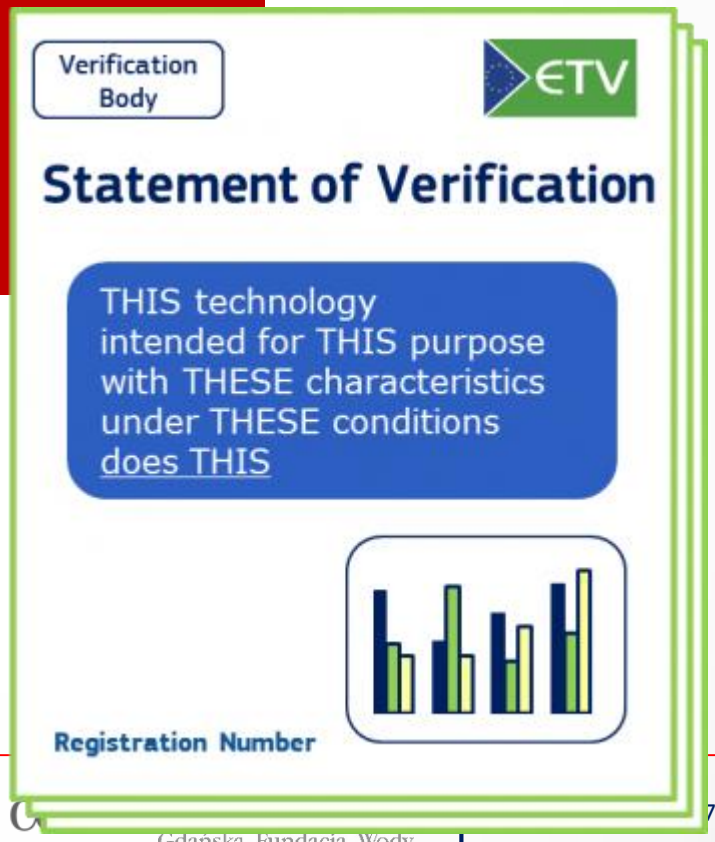
EU ETV outputs

Verification Report

- details on the verification procedures applied to verify the technology
- set of all test data used

Verification Statement

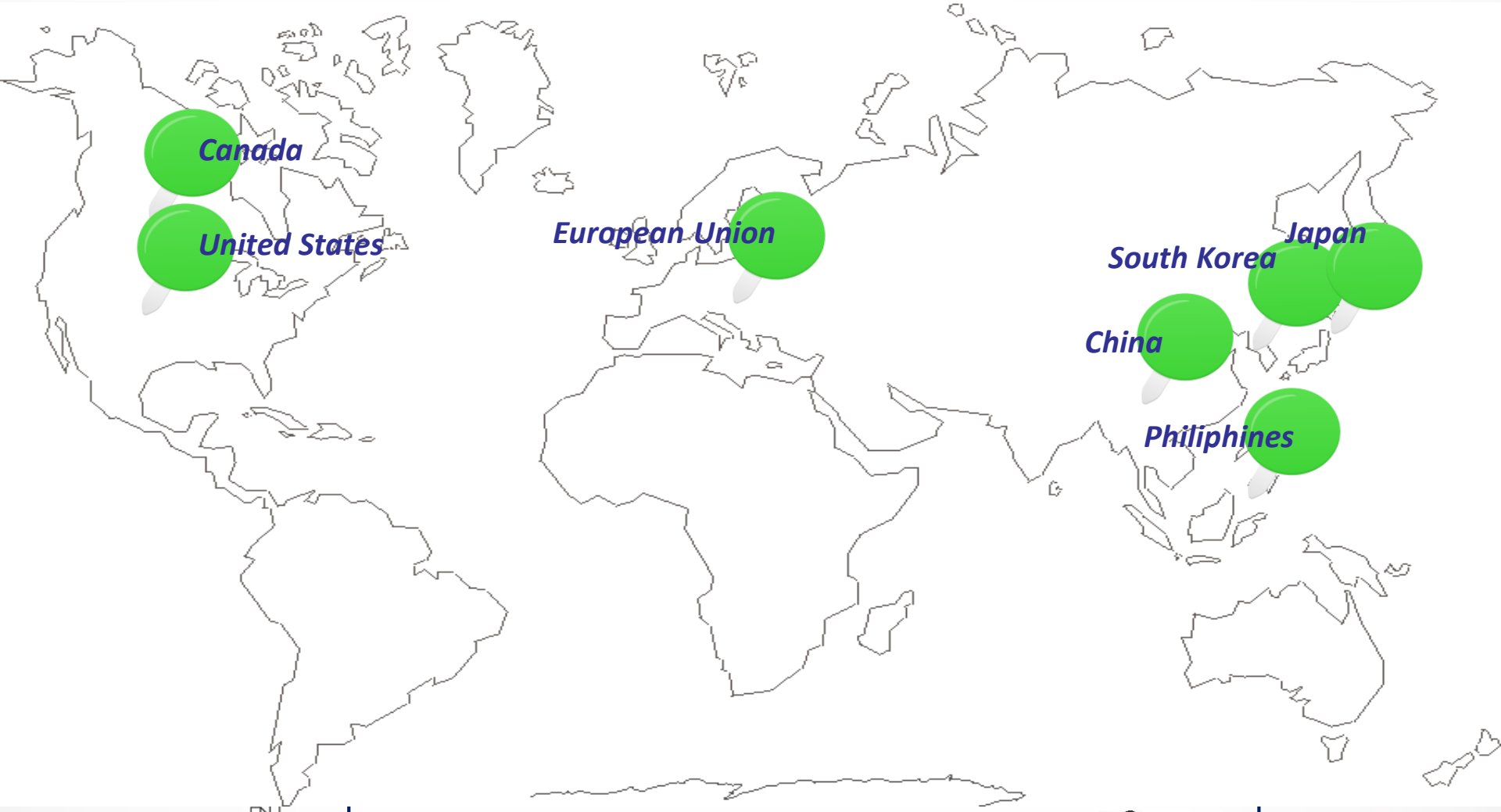
- a summary of the VR
- includes the verified declaration and conditions under which it was verified
- registered and published by EC
- recognised in all EU countries and
- ultimatelly also on global level



EU ETV

- EU ETV Pilot Programme launched by the European Commission in December 2011 with participation of 7 countries (PL,DK,UK,FR,FI,CZ,IT)
- So far 205 technologies approached verification, 86 verifications ongoing, 23 verification statements issued
- Currently the EU ETV Pilot is under assessment and preparation for a full programme
- ETV mentioned in the EU Circular Economy Package

ETV globally



Verified once accepted everywhere

- Globally recognized quality standard framework: **ISO 17020 and ISO 17025**
- Robust procedures:
  - General Verification Protocol (GVP) in EU
  - technical standard **ISO 14034** „Environmental Management – Environmental technology verification”


INTERNATIONAL STANDARD

ISO 14034

First edition
2016-11-15

Environmental management — Environmental technology verification (ETV)

Management environnemental — Vérification des technologies environnementales (ETV)

Adopted as national standard in Norway
Voting ongoing in CEN/CENELEC as an EU standard

Who can apply

- A technology developer from or outside EU
- Manufacturer
- Provider
- A legally authorized representative of them

Who can verify and who can test

- **Verification in EU** : Verifcation bodies accredited to ISO 17020 for inspection bodies type A to perform ETV under the EU programme with water technologies in their scope of accreditation

  - ETV Body IETU

- **Testing:** Test bodies providing test systems quality compliant to ISO 17025, for analytical labs accreditation to ISO 17025 required!

When ETV is particularly helpful

- Manufacturer is a new player on the market
- Technology is a niche solution
- There are many similar technologies available – to distinguish a technology among competitors
- Technology performs better than standard but certification does not allow to demonstrate it
- There is no standard to confirm the performance or there are different standards

Who benefits and how

Manufactures

- ETV provides **objective and reliable evidence** on the performance of technologies they are bringing to the market, in order **to convince investors** and customers about the benefits they can gain from their use
  - *Innovative enterprises may be particularly interested by this approach to differentiate their technologies from that of larger competitors*

Who benefits and how

Purchasers (public & private)

- **ETV supports purchasers** who need **to base** their buying **decisions on sound information**, widely recognised as scientifically valid and acceptable **as proof of evidence in tendering and purchasing procedures**
  - *information provided by ETV enables making useful comparisons and identify technologies fitting best users' needs*

Who benefits and how

Policy makers/regulators

- ETV facilitates the implementation of public policies and regulations by providing citizens, regulators and decision-makers with **solid information on the level of performance achievable by new environmental technologies** ready for the market

ETV Body-IETU

- **Poland's only verification body accredited to perform ETV for water technologies under the EU ETV**
- We perform verifcations of technologies for:
  - drinking water
  - removal of chemical and mircobiological contamination from wastewater
  - Industrial water treatment
  - monitoring of water quality (since June)
- We cooperate with verification and test bodies from Canada, US, South Korea, Japan as well as testing bodies from Germany, Norway and Netherlands

ETV Body-IETU

Our ETV service meets the highest standards of quality and impartiality guaranteed by :

- Accreditation of the Polish Center of Accreditation PCA for compliance to PN-EN ISO/IEC 17020 for inspection body type A
- ETV procedures compliant to the General Verification Protocol of the EU ETV
- Quality of the test data to back the claim compliant to ISO/ EC 17025

PCA
Polskie Centrum Akredytacji
INSPEKCJA
AK 026

Succes thanks to credibility

We look forward to meeting you at:

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