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Cargill and VP EHEDG  
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# EHEDG/3A - Hygienic Engineering and Design: Value for Food Processors

# AGENDA

- Importance of hygienic engineering and design in food safety management at Cargill
- Role EHEDG and 3-A Standards Inc.
- EHEDG news update





Cargill ...our diverse stakeholders

Customers  
Suppliers  
Consumers  
Candidates  
Investors

Governments  
Employees  
NGOs  
Communities

**Cargill**<sup>®</sup>

**Our Purpose:**

**To be the leader in nourishing the world in a safe, responsible and sustainable way.**

**Our Vision:**

**To be the most trusted partner in agriculture, food and nutrition.**



With  
**150,000**  
employees



Located in  
**70**  
countries

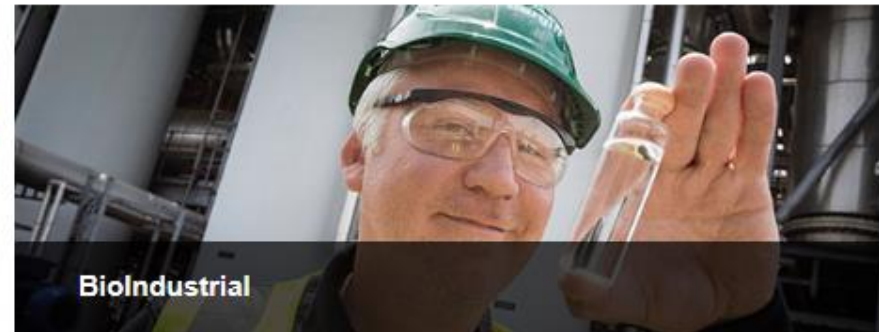
Speaking  
**65+**  
languages



And  
**151**  
years of experience



# Markets we serve



# Why Hygienic Design?

# Hygienic Design – Key to Ensure Food Safety by Design



# Purpose of Hygienic Design

Various types of production processes **Open - Dry - Wet - Closed**



Deliberate application of design measures to minimise risk of contamination by **biological**, **chemical** and **physical** hazards.

**Design requirements must be established on risk based decisions.**

# More Reasons for Hygienic Design

## BESIDES MANAGING FOOD SAFETY HAZARDS

- Prevention of product quality issues
- Equipment reliability - maximising production time and reduced life cycle costs
- Process and occupational safety
- Sustainable operations
- Regulatory compliance



# Hygienic Design as Best Available Technique (BAT) in EU



ENVIRONMENT

European Commission

European Commission > Environment > Industry > Industrial emissions > Directive >

Home About us Policies Funding Legal compliance News & outreach

Industrial Emissions

European Pollutant Release and Transfer Register (E-PRTR)

Industrial Emissions Directive (IED)

Legislation

Transposition

Implementation

FAQ

IED Chapter III - Large Combustion Plants (LCP)

Medium Combustion Plants (MCP)

Petrol storage & distribution

Studies

Links

The Industrial Emissions Directive

Summary of Directive 2010/75/EU on industrial emissions (Integrated pollution prevention and control)

Industrial production processes and their emissions of air pollutant

Directive 2010/75/EU of the European Parliament and of the Council of November 2010. It is based on a IPPC (Directive) following an extension to be transposed by Member States.

The IED aims to achieve a high level of industrial emissions across 50,000 installations undertaking with a permit (granted by the authorities) the principles and provisions of the IED.

The IED is based on several pillars:

1. The integrated approach to industrial emissions, covering e.g. emission prevention of accidents, and
2. The permit conditions including the definition of BAT and the

ECO DHY BAT

Life

LIFE12ENV/ES/001070

INICIO ECODHYBAT CONSORCIO EMPRESAS DOCUMENTOS CONTACTO

Eco-diseño higiénico para equipos de procesamiento de alimentos

Proyecto ECODHYBAT - Ecodiseño higiénico para equipos de procesamiento de alimentos

REDUCCIÓN DEL CONSUMO DE AGUA 30-40%

ECO DHY BAT

El Proyecto objetivo higiénico de las instalaciones de limpieza a media escala son absolutamente seguras y mantienen la seguridad del proceso, impacto ambiental y energía residual.

Hygienic design mentioned in new 2017 draft Reference document on BAT for sustainable operations



Best Available Techniques (BAT) Reference Document in the Food, Drink and Milk Industries

## Colour code:

Black: Text from the original FDM BREF (August 2006)

Red: Updated and new text proposed for the first draft of the revised FDM BREF. The text highlighted in yellow will not

Industrial Emissions Directive 2010/75/EU (Integrated Pollution Prevention and Control)

JOINT RESEARCH CENTRE

Directorate B – Growth and Innovation

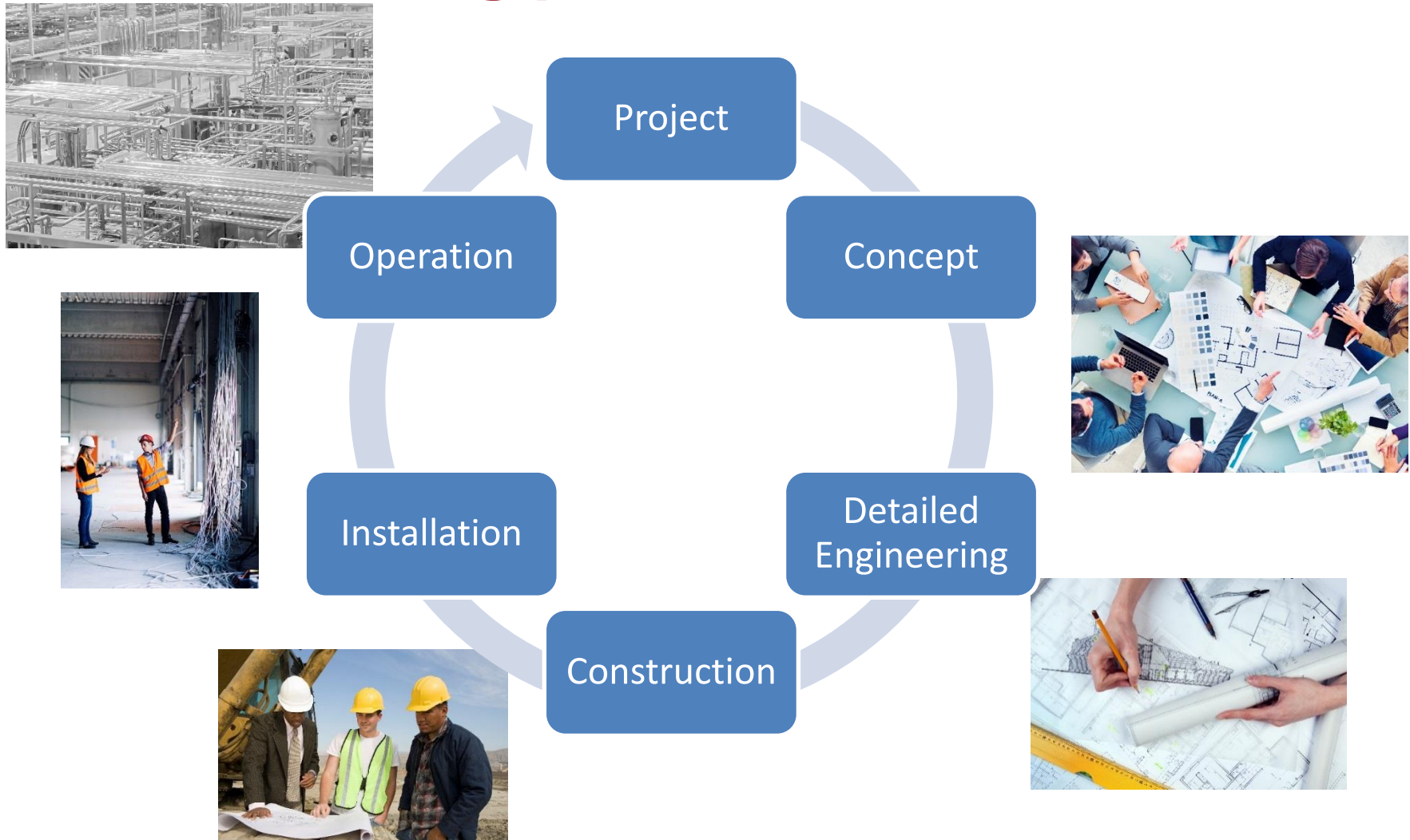
Circular Economy and Industrial Leadership Unit





# How do I achieve Hygienic Design?



# For new or upgrading legacy food manufacturing plants



# Risk-Based Designs

- To avoid **under** design  to prevent Food Safety scares
- To avoid **over** design  to prevent spending too much money and complexity in operating plant

Multiple skills and capabilities are required to determine **what is right** for specific manufacturing process and associated risks.

Cargill's zoning model and Manufacturing Technology packages aim to support (together with HACCP) how to determine what is needed in a systematic way.

## What else.....



# Industrial Collaboration is Important



# Industrial collaboration

- EHEDG / 3A important partners in **setting minimum requirements** and defining guidelines and solutions for hygienic design
- EHEDG / 3A **guidelines**, provide basis for hygienic building, process, equipment, and utility design
- EHEDG / 3A **certification schemes** providing guidance in choosing hygienic equipment and components
- EHEDG / 3A Working Groups, perfect occasion to **exchange knowledge and experience** with experts and to come to industrial best practice guidelines for hygienic design to ensure food safety and quality



# HD Capability Building





# Of critical importance that various functions have right HD capabilities



Project Manager



Maintenance Engineer

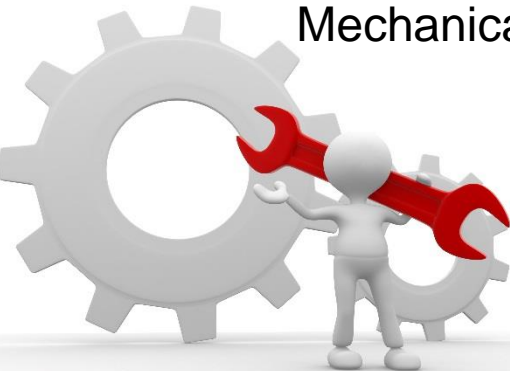


QA Manager

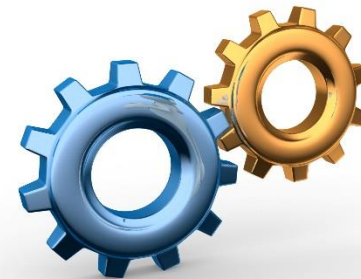


Project Engineer

Mechanical Engineer



Auditor



Process Engineer



Both



and



provide an important contribution  
in this



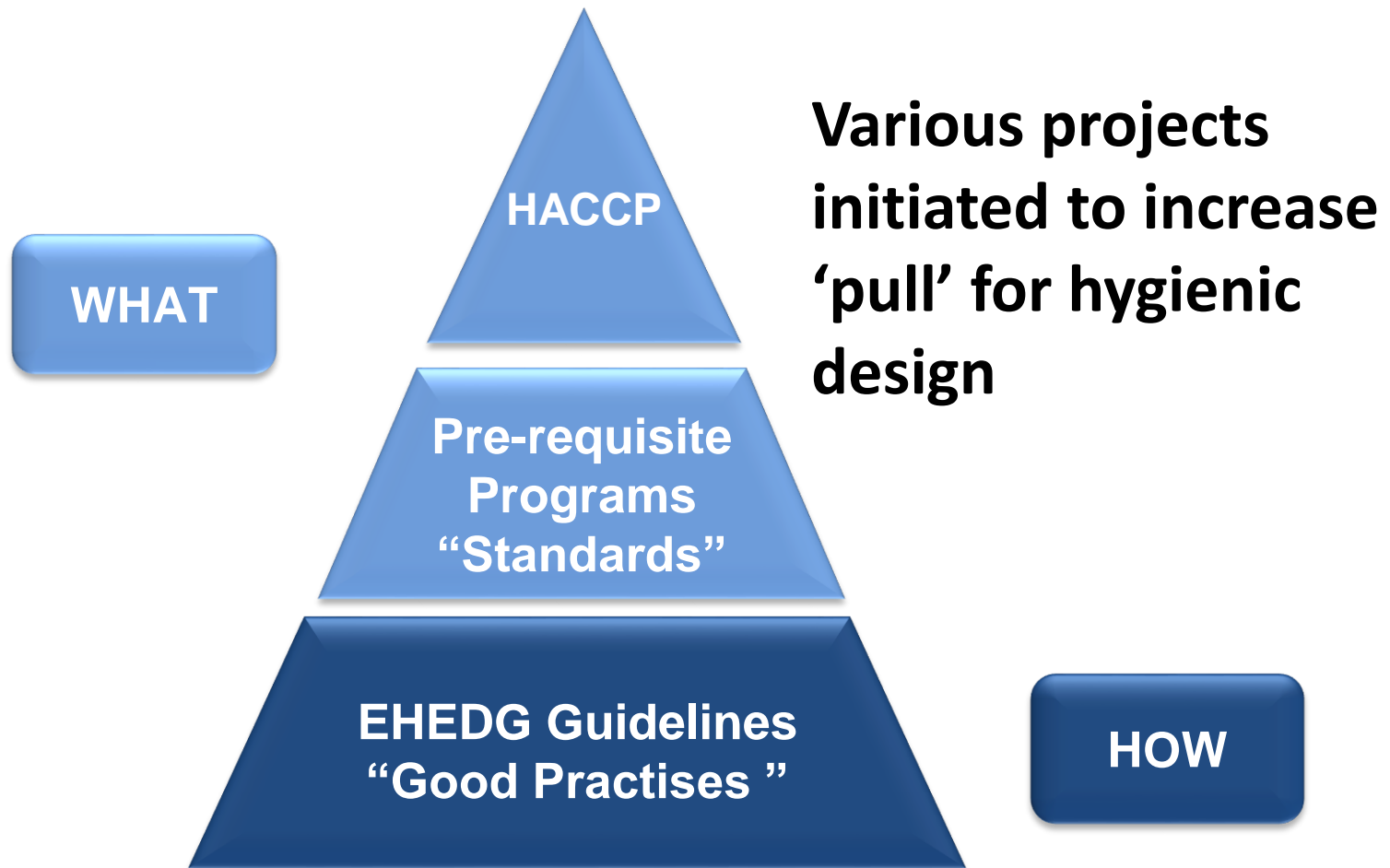


# EHEDG Update

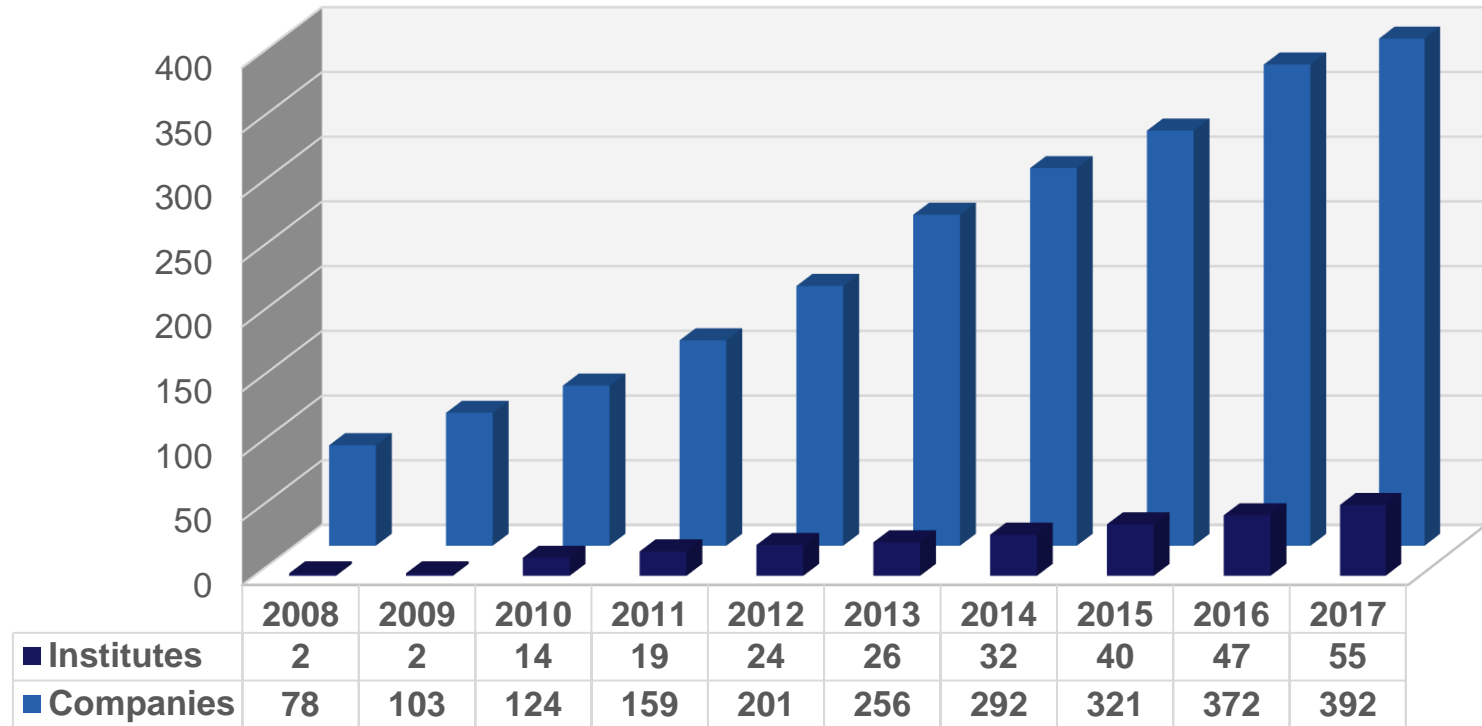




# Advance Position of EHEDG in Food Safety/Quality Management



# Membership Development - Continuous Increase!



# Global Network

- The “Big 50” global member companies
- 80% equipment & machinery manufacturers and 20% food producers
- Established in 31 geographical regions including 17 EU countries



# A global network

## Existing Regional Sections Europe (22)

Armenia  
Austria  
Belgium  
Croatia  
Czech Republic  
Denmark  
France  
Germany  
Italy  
Lithuania  
Macedonia  
Netherlands  
Nordic (FI, NO, SE)  
Poland  
Romania  
Russia  
Serbia  
Spain  
Switzerland  
Turkey  
UK & Ireland  
Ukraine





# A global network

## Existing Regional Sections America (4) & Asia (5)



# The Core Product Portfolio

	Guideline Development	Equipment Certification	Training & Education
To date	Published: 43	Valid certificates: 512	Authorized trainers: 30
2017	Active working groups: 21	Expected certificates: 30	Advanced training courses: 25

# EHEDG Working Groups

## Active:

- Air Handling (Update of Doc. 30)\*\*
- Bakery Equipment
- Cleaning in Place
- Cleaning Validation \*
- Cleaning & Disinfection
- Dry Materials Handling
- Fish Processing
- Food Refrigeration\*
- Foreign Bodies
- Heat Treatment (Update of Doc. 1 and 6)\*
- Hygienic Systems Integration\*
- Hygienic Design Principles (Update of Doc. 8)\*
- Materials of Construction in Contact with Food (update of Doc. 32)\*
- Mechanical Seals\*
- Seals
- Sensors\*
- Tank Cleaning
- Test Methods
- Training & Education
- Valves\*
- Water Management
- Welding\*\*

## Projected:

- Meat Processing

\* = Update of existing documents

\*\* = Draft under final review / subject to publication

**Today: > 400 voluntary experts actively involved in 21 Working Groups**

## EHEDG in summary

- Strong product portfolio and expertise with global presence specialised on food industry
- Unique and reliable equipment certification program to ensure that equipment is cleanable by design
- Procedures to improve quality of pre-requisite programs which are fundamental to ensure right safety and quality of products every day
- Provide a unique international stakeholder platform for collaboration, knowledge exchange and networking





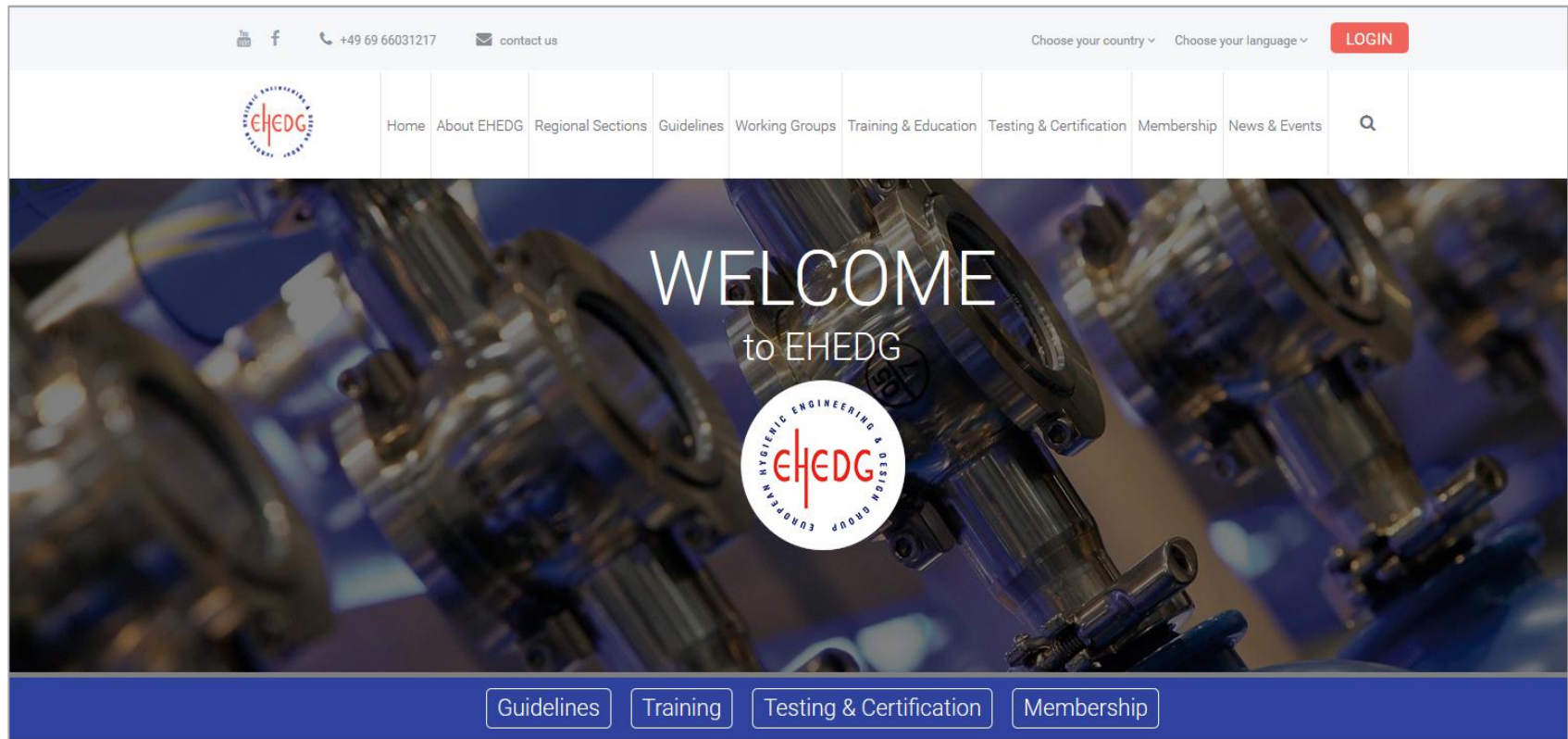
## **EHEDG is committed**

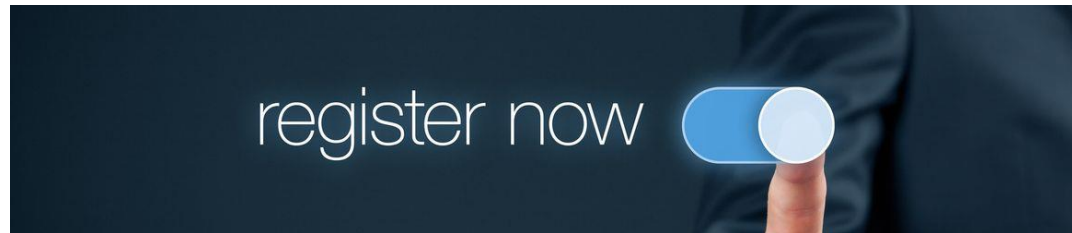


- **Develop competencies and capacity building in hygienic design and engineering to support food safety and quality management**
- **Manage costs, sustainability and improving operational efficiency**

# Global Information Channel – New Look

[www.ehedg.org](http://www.ehedg.org)





**You are welcome to join us!**

Online Registration:  
[www.ehedg.org](http://www.ehedg.org) > Membership > Company Membership or  
> Institute Membership

**Thank You!**



More **INFORMATION**



[www.ehedg.org](http://www.ehedg.org)