



BUREAU
VERITAS



APQP4WIND

WEBINAR MAY 12, 2021

WELCOME BY PETER WORCK



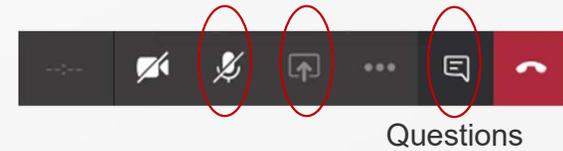
Peter Worck

Sales & Customer Relations Manager

peter.worck@bureauveritas.com

tlf. +0045 2250 6708

It is possible to arrange one-to-one meetings through web.



KEY FIGURES WORLD WIDE & DK



€5.1
billion

Revenue in 2019



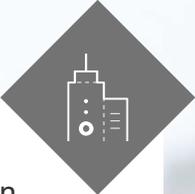
More than
78,000

employees



400,000

clients



More than
1,500

offices & laboratories
in 140 countries



More than

5

Business Areas



More than

180

employees



More than

4,000

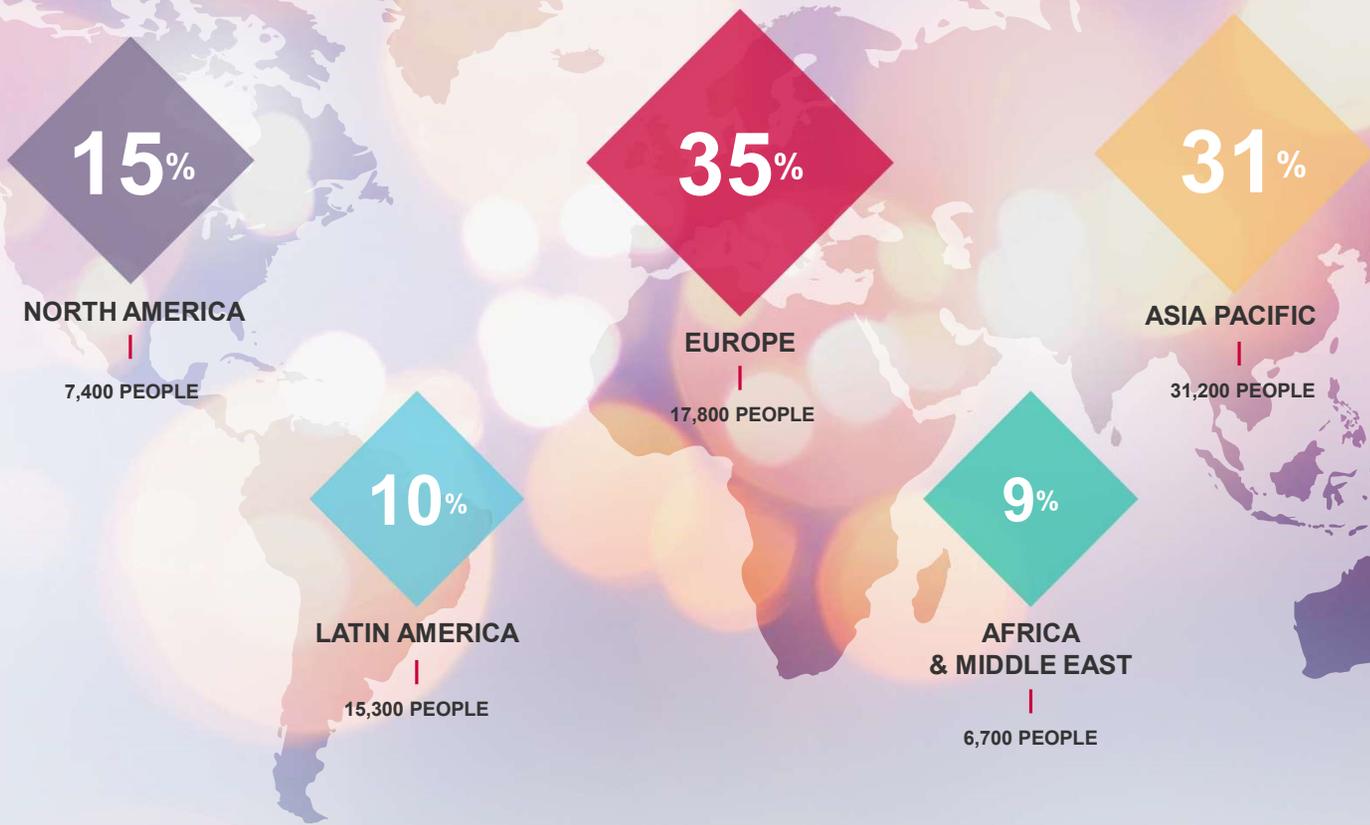
clients



3

offices
(Fredericia, Esbjerg
and Copenhagen)

REVENUE AND PEOPLE BREAKDOWN BY GEOGRAPHY





WHAT WE WILL TALK ABOUT

- ✓ Presentation
- ✓ Short **intro** to APQP4Wind
- ✓ The **opportunities** presented by APQP4Wind
- ✓ The **training modules**
- ✓ **Where** and **how** we can **offer the training**

WELCOME

PRESENTER FROM BUREAU VERITAS



Ivan Mikkelsen

Lead Auditor and Product Manager

With a background in a business- and statistical education, more than 30 years of experience in quality and management functions in automotive, renewable energy, packaging and certification, and many years experience in providing training, I am focused on how systems and risk management help companies to develop competence and meet their strategies in a global market.

BUREAU VERITAS

APQP4WIND

PROFESSIONAL TRAINING PROVIDER

Professional training provider in APQP4Wind worldwide. Bureau Veritas has the **experience, know-how and technical expertise** to improve your productivity and performance through trainings and workshops.

APQP4Wind **trainings has been delivered** in Denmark, Germany, Turkey, Hungary, Spain, China, US, South Korea, Japan, India etc.

English, German, Chinese and Danish **native speaking trainers with decades of hands on experience in APQP and its' tools**

Experience in implementing and facilitating FMEA at Wind Power companies incl.OEM's.

Strategic screening workshop to check your companies challenges in the Wind market, and establish actionable first steps towards APQP4Wind is offered

All trainings can be delivered as **open training, in-house or online** *

* APQP4 Wind Specialist training online is an option during COVID 19. The Specialist training is highly recommended to be face to face



Bureau Veritas is one of the worlds leading companies in testing, inspection and certification.

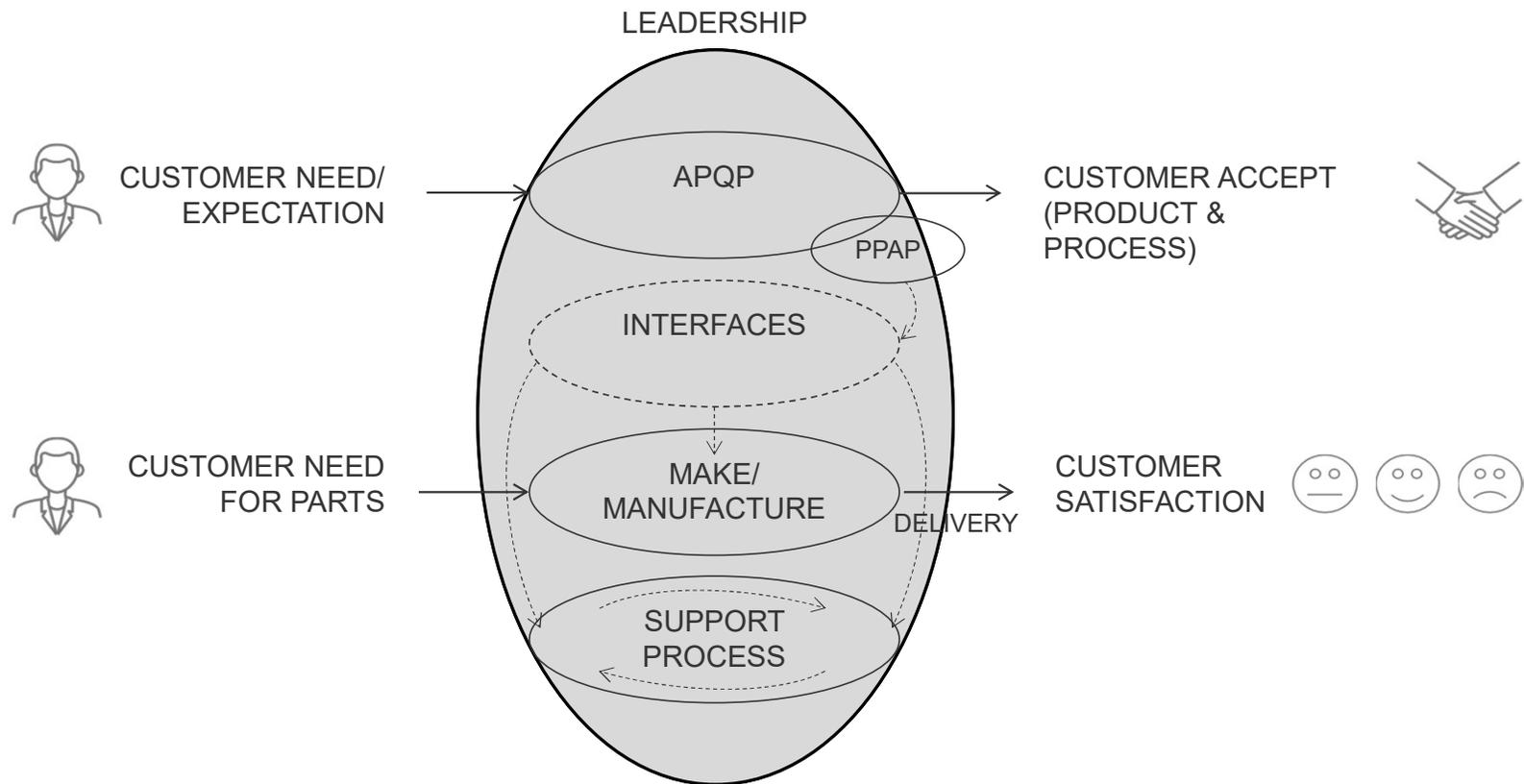
[More info and enrollment](#)

[Watch our APQP4Wind video](#)



APQP4WIND

APQP IN A BUSINESS-PROCESS PERSPECTIVE

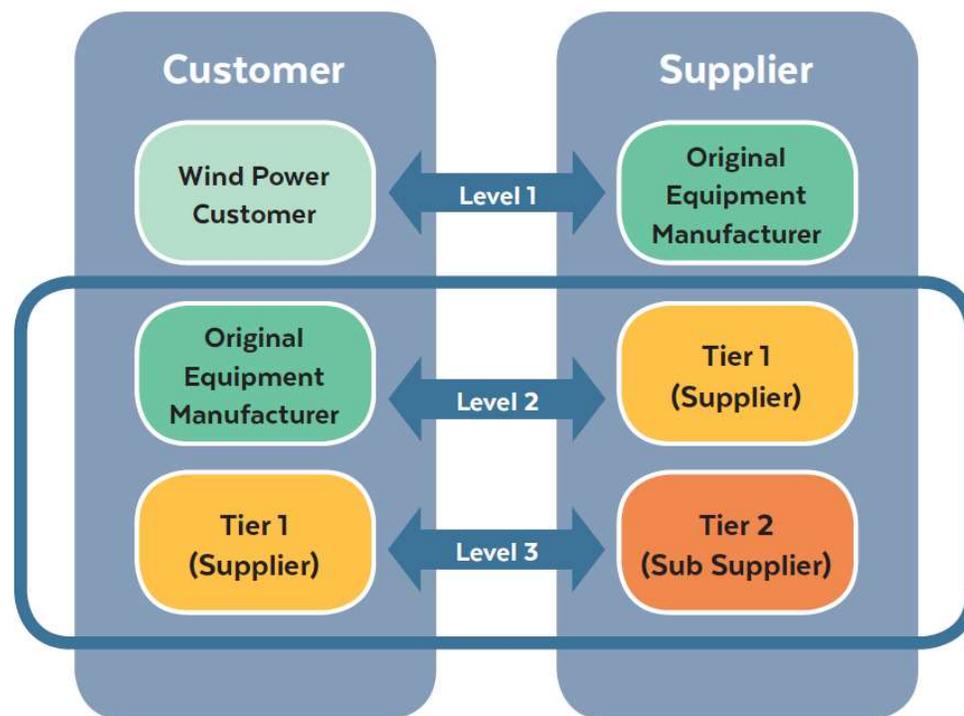


ROLES AND LEVELS

THE SCOPE OF APQP4WIND

The scope of APQP4 Wind is the whole chain of suppliers, including the interface to the Wind Turbine Manufacturer (OEM)

As a supplier you will have 2 roles
– as supplier and when relevant as customer



WIND BUSINESS IS YOUNG AND DYNAMIC AND HAS ALREADY LEARNED A LOT

Typical problems seen in Wind (and other) industries

You approved this quality earlier!

Too big for the transport-equipment

Our measurements show something else!

6 months to ramp-up is not acceptable!

This is like the first sample!

New sub-supplier ...you did not tell!

Lack of resources? We need to launch the new turbine now!

What did you change?

Make these variations disappear!



DEVELOPMENT IN THE WIND-BUSINESS

FROM

TO

Pioneer status

Large scale Industry

Local clusters

Global Partners

Subsidiaries and stepwise growth

Continuous and market driven growth

Small/Medium opportunity driven customers

Large Capital and risk driven customers

Problem Fixing Locally

Global Standards

Long supply chain with 1-1 relations

High level integration and networks

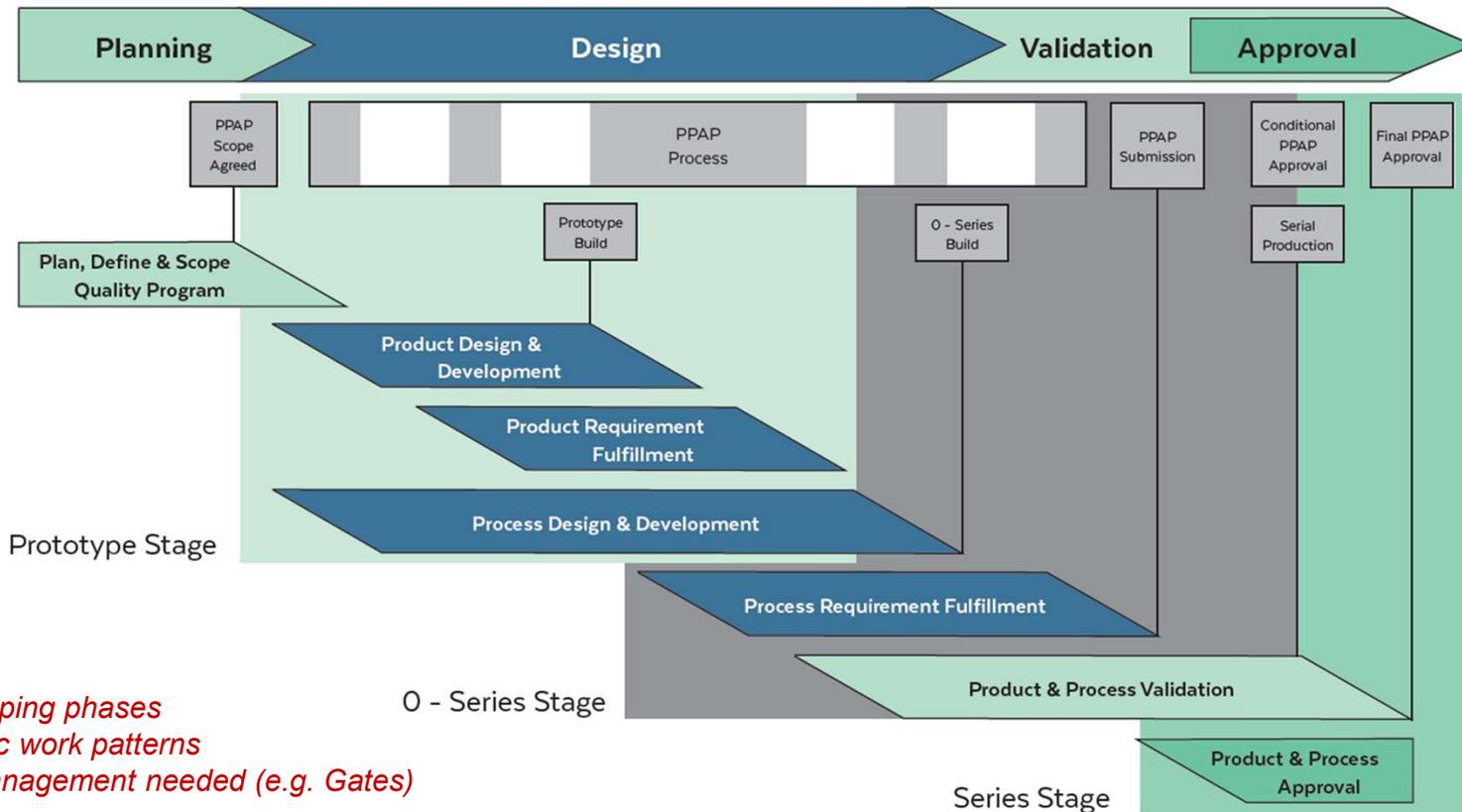


THE CHANGES LEADS TO THE OBJECTIVES OF APQP4WIND

- **Increase efficiency, profitability and growth by:**
 - Alignment/standardization of language and tools
 - Alignment of processes and standardization of communication patterns
 - Cross functional work and networking
 - Integrated and preventive Risk Management
 - Balanced management of relationships (“ We are Windpower”)
 - Reducing variation and waste, improve reproducibility – have more fun ?
- **And focusing on the product and process development processes**

APQP4WIND

-FRAMEWORK AND PROCESS-STEPS



- * *Overlapping phases*
- * *Dynamic work patterns*
- * *Risk management needed (e.g. Gates)*

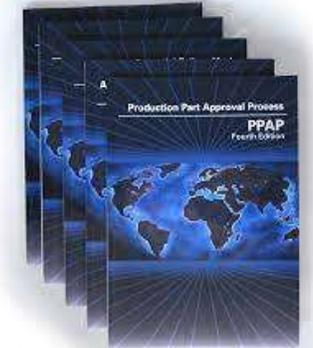
APQP BACKGROUND AND BENCHMARKS

APQP builds on the principles of quality planning as pioneered by Deming from the 1950s, the Automotive industry during the later decades of the 20th Century, and Aerospace & Defence in early 21st century

- GM, Ford & Chrysler published the first combined APQP manual for the automotive industry in June 1994.
- Siemens, Vestas, KK and LM published the first combined APQP4Wind manual for the Wind Power industry in January 2017

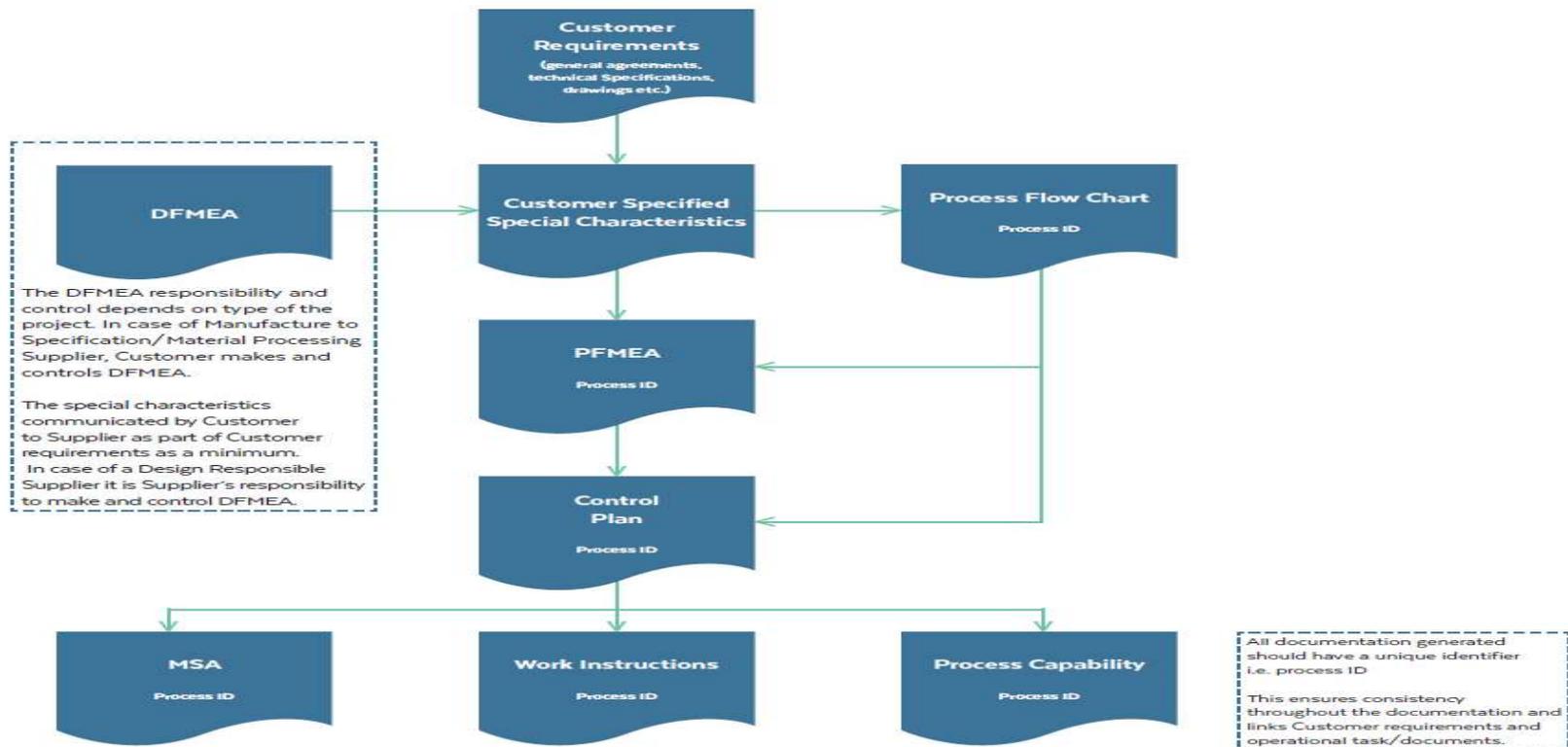
We recognize that the Wind Power industry is different from other industries and we have developed guidance material which is tailored to suit companies working in this industry

- Low volumes
- Long life cycles
- Higher levels supply chain integration needed
– and for a while very different maturity in the supply chain



APQP – A PROCESS

WITH RISK MANAGEMENT TOOLS ADAPTED TO WIND

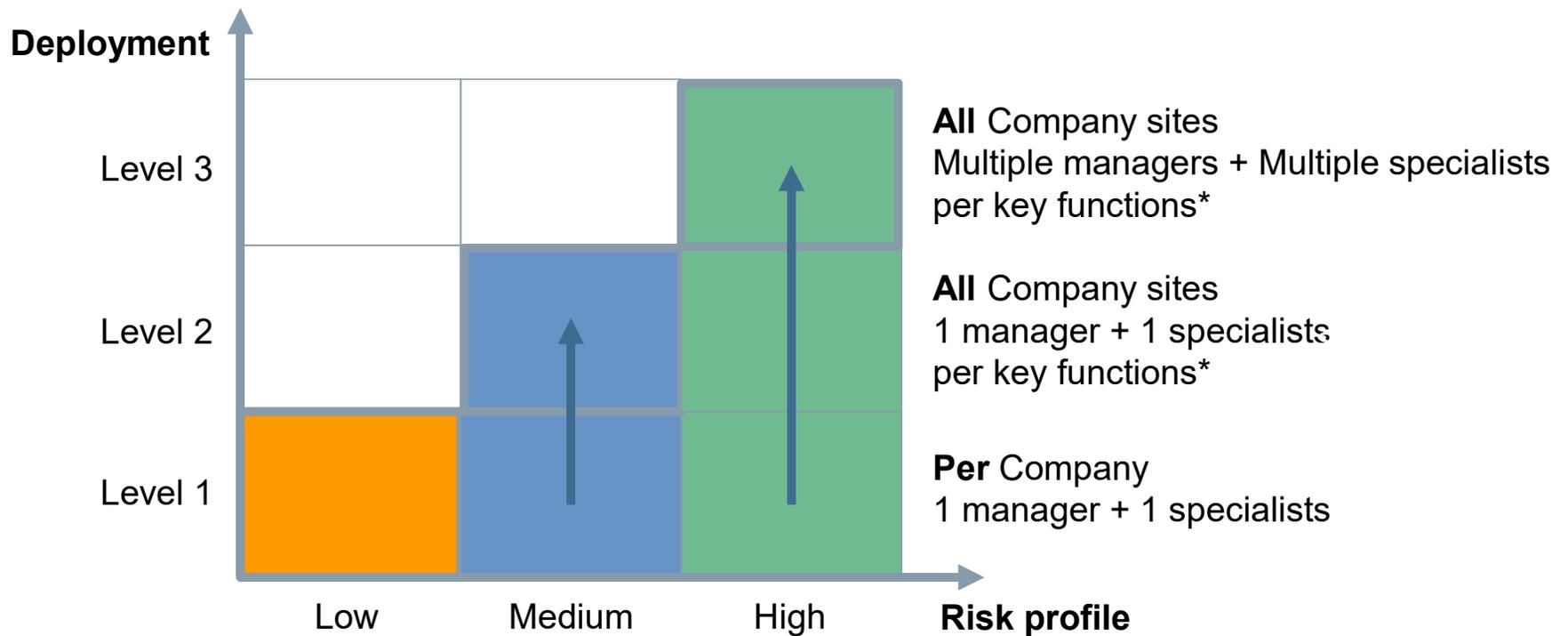


RISK MANAGEMENT

- AND THE OPPORTUNITIES GIVEN IN APQP4WIND

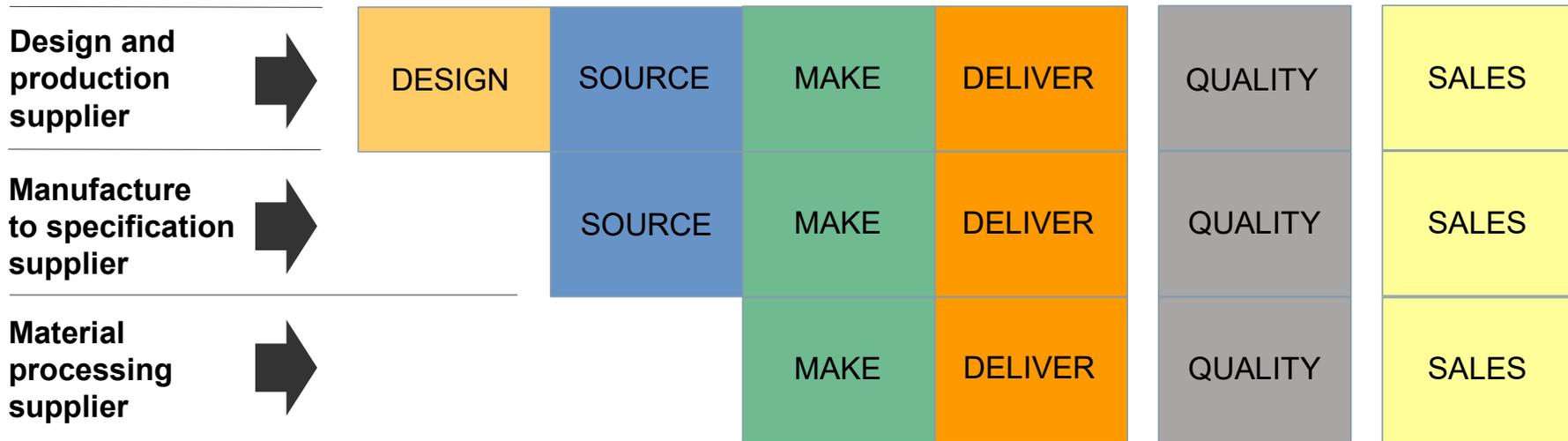
- Opportunity to decrease risk of not fully understand customer needs
- Opportunity to get a full picture of your capacity and readiness before committing
- Opportunity to optimize design and manufacturing process in a complete perspective
- Opportunity to prepare the manufacturing process through risk analysis/mitigation and good measurement systems
- Opportunity to work together across departments and between companies in the supply chain

OEM CUSTOMERS EXPECTATIONS DEPLOYMENT/RISK MATRIX FOR SUPPLIERS



OEM CUSTOMERS EXPECTATIONS

* SUPPLIER KEY FUNCTIONS DEFINED



Agreed between Vestas and Siemens-Gamesa, now including SALES.



APQP4WIND TRAINING CONCEPT

Management Awareness Training

- The objective of the APQP4Wind Management Awareness Training is to give the participants a solid understanding of the management role in the APQP4Wind process, introduce the framework, requirements and the tools.
- In addition to make the participants reflect on how APQP4Wind can be successfully implemented and thereby mitigate risk and improve value creation.



Duration

1 day , 7 hours



Target group

Top management, managers and quality managers working in companies delivering to the Wind Industry

Open course or in-house training

APQP4WIND TRAINING CONCEPT

APQP4Wind Specialist Training

- The objective of the APQP Specialist Training is to give the participants a deeper understanding of the APQP4Wind process, introduce the framework, the requirements and the tools.
- Furthermore to train and to understand how to use and apply the tools in practice.



Duration

4 days, 28 hours



Target group

Quality management, coordinators, experts, system-people and other involved in the APQP process

Open course or in-house training

FURTHER PERSPECTIVES **AND INSPIRATION TO GET STARTED**



HOW TO DEVELOP YOUR COMPANY?

Consider as management a multiple purpose approach.
APQP4Wind is an opportunity for desired change!

We are working in chaos – we need more structure!

We cannot find our records

When she left we lost too much knowledge

Why involve the supplier so early – we are the dream-team

Department X has the wrong priority and sub-optimizes

Targets and incitements are conflicting

Lack of ressources? We need to launch the new turbine now!

The tight tolerance is the supplier's problem. –lets COA..

My cubicle has no windows – boring department



APQP4WIND SUPPORTS YOUR COMPANY'S JOURNEY TO GLOBAL EXCELLENCE



How to Start Implementation and Ensure Benefits

Strategy and policy for APQP4Wind - Commitment to customer focus, quality management and strategic objectives

APQP4Wind – stakeholders' benefits

Who are the winners

- SOCIETY: Efficient and sustainable power supply based on innovation - boosted by world class methodology on a global basis
- DEVELOPER: Speed, efficiency, and predictability
- INVESTORS: Reduced risk and improved profitability
- THE SUPPLY CHAIN: Basis for effective working with OEM's and partners globally

The Goldmine - cost of poor quality

- Warranty cost for repair and monitoring
- Retrofit
- Not living the intention of DMATS(*)
- Control and inspection cost based on low confidence
- Delays due to non-aligned processes and structures across companies

APQP4Wind – a strategical decision

”A strategical decision” means

- FIT: Considered to fit to the market position and intention of the company
- ALIGN: Will be aligned with the company’s management system, its “DNA”, and its organizational development intention
- COMMITMENT: Management provides resources and follows implementation
- BELIEF: In handling questions and dilemmas, the direction is persistently kept

And does not mean

- Delegate a workbook to the Q-department
- Pay lip service and forget it
- Allow internal disagreements to persist and distract the efforts
- Accept departmental overload as a reason for ignorance

Implementation decision and policy

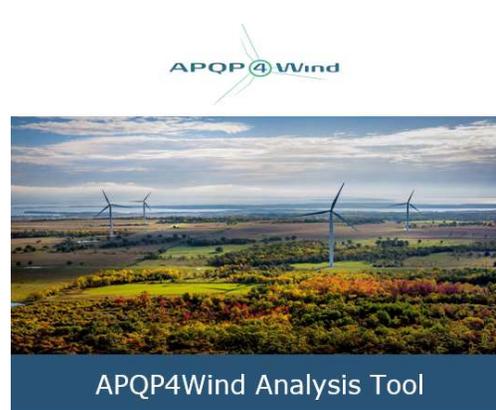
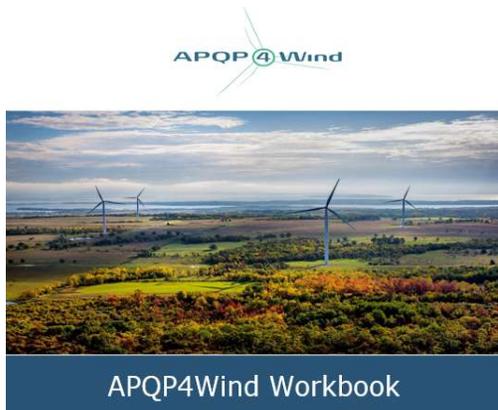
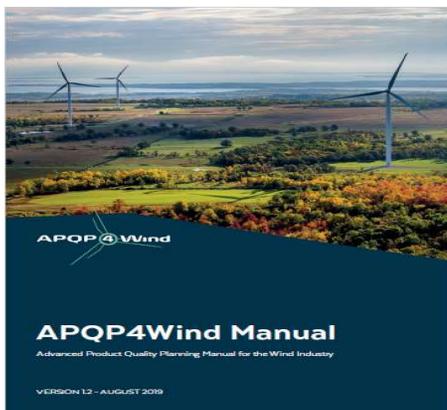
Implementation decision should involve

- PROJECT PLAN and TIMING: Some key steps will be elaborated
- IDENTIFYING PURPOSES: From a strategic, organizational and leadership perspective - develop multiple purposes
- POLICIES: Consider updating Quality Policies and establishing objectives, targets and success criteria
- MONITORING: Progress against targets - handling constraints

Examples of APQP4Wind Policies

- We will share relevant input and ask for early involvement of key suppliers
- We will acknowledge and respond to suppliers' concerns and proposals
- We will utilize proactive Risk Analysis with APQP4Wind tools
- We will ensure a timely cross-functional approach to new parts and technology to handle key risks and options
and set objectives to track progress

APQP4WIND ELEMENTS



Training Providers

Become certified



APQP4Wind will help to increase quality further and bring the wind industry closer to the goal of making wind energy more cost competitive. APQP4Wind is designed to be global. To be used by utilities, wind turbine manufacturers, suppliers and sub-suppliers. To improve quality and processes. To lower the cost of energy (CoE) from wind. To make the life of companies in the wind industry easier.

The APQP4Wind training providers are approved by APQP4Wind as global providers of training courses to deploy the new quality standards. The APQP4Wind Manual can be bought through the training providers.

Certified training providers



[Read more about APQP4WIND training at Bureau Veritas here.](#)



[Read more about APQP4WIND training at DNV-GL here.](#)



APQP4WIND

APQP4WIND WEBSITE



All information about APQP4Wind in one place



The screenshot shows the APQP4Wind website homepage. At the top is the APQP4Wind logo and a navigation menu with links for ABOUT, MANUAL & WORKBOOK, TRAINING, NEWS & EVENTS, STEERING COMMITTEE, FAQ, and CONTACT. The main heading is "Welcome to APQP4Wind". Below this is a paragraph explaining the website's purpose: "The purpose of this website is to communicate to suppliers and sub-suppliers a common Advanced Product Quality Planning (APQP) [Read more](#)". A large photo shows a group of people in a modern building with the text "The industry celebrates APQP4Wind as the New Normal". To the right of the photo is an "Introduction" section with text: "APQP4Wind is part of the cross industrial project New Standards in the Wind Industry and aims to expand the use of the newly developed APQP4Wind standard. APQP4Wind was started in 2015 and is supported by the Danish Industry Foundation and facilitated by the Danish Wind Industry Association. APQP4Wind™ is a trademark of the Danish Wind Industry Association in Denmark. [Read more about APQP4Wind](#)". Below the photo is a section titled "APQP4Wind helps to lower costs" with text: "Wind turbines are marvels of engineering and often consist of no less than 8 000 separate parts. The stress, and wear that a wind turbine goes through is unique, running non-stop for up to 25 years in harsh conditions. APQP4Wind will help to further increase quality and all in all I am sure that the common outlook will benefit from APQP4Wind". To the right of this text is a "review the manual" button with a document icon. At the bottom right is the "Steering Committee" logo for "LM WIND POWER a GE Renewable Energy business".

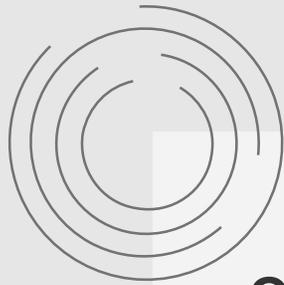


APQP4WIND

APQP4WIND TRAINING

- Upcoming open training: Management and specialist in Norway around October:
- In house training
 - At the company location
 - Remote
- Open training Management, specialist refresher, internal audit in Denmark (date will soon be announced)





QUESTIONS OR COMMENTS?



Ivan Mikkelsen | Lead Auditor

Email: ivan.Mikkelsen@bureauveritas.com

Mobile: +45 25 20 71 79 | +45 77 31 11 00

Website: www.bureauveritas.dk



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