



La Posición Innovadora de la Industria Eólica en un Mercado de Alta Competencia

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Pamplona, December 2nd 2020
PPT-3397-R00



AGENDA

1. NABRAWIND INTRODUCTION

- Overview
- IP Portfolio

2. INNOVATION MANAGEMENT

- Definition
- A Team Innovation Formula
- Open Innovation

3. WIND ENERGY TRENDS

- Global Innovation Trends
- IP Pareto's Principle

4. CONCLUSION

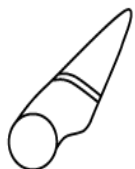
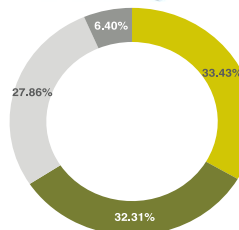
- Summary

NABRAWIND TECHNOLOGIES

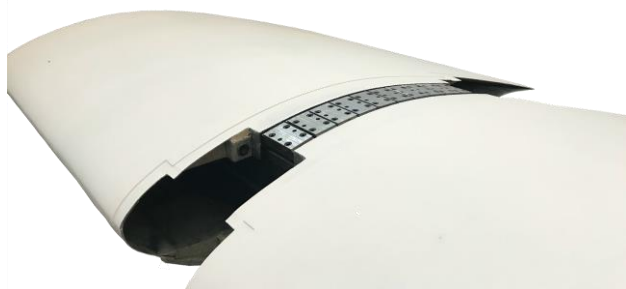
Advanced Wind Technologies



basarro²⁰₅



Nabrajoint®



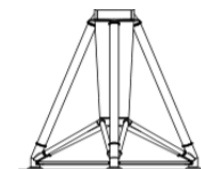
2016



Nabralift®



2018



NabraBase®



2019

2020

PRODUCTS DEVELOPMENT

COMMERCIAL DISSEMINATION

SALES PROCESS

COMMERCIAL PROJ.

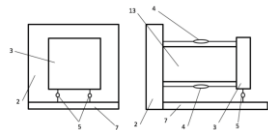
PRESERIAL

1 NABRAWIND INTRODUCTION

Nabrawind IP Portfolio

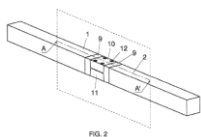
WO2017140918A1

Test Bench and Method of Use



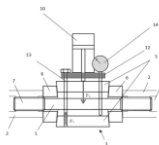
WO2017174828A1

Device for the Joint of a Modular Blade



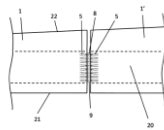
WO2019129894

X-pacer Pretension tool



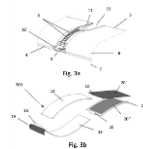
WO2015181401A1

Bolted Joint for Modular Blade



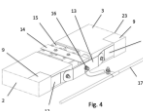
PCT/ES2020/070485

Modular Blade Hull



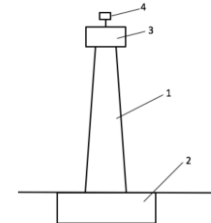
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Lightening Protection System



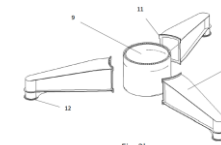
WO2017140919A1

Device for Wind Tower and Foundations Testing



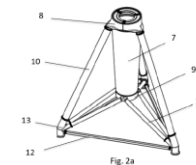
WO2019043272A1

Modular Transition



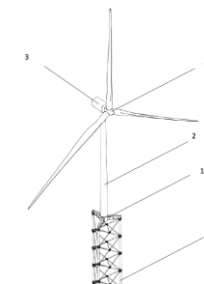
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Modular Transition



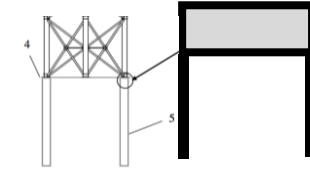
WO2017203065A1

Self-Erected Tower



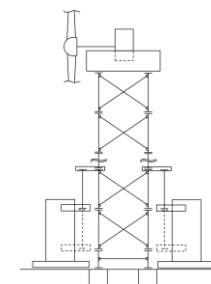
P201831119 ES

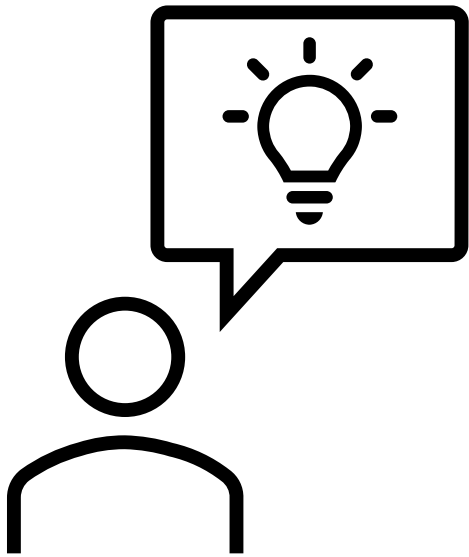
WTG Tower Foundation



WO2015150594A1

WTG Self-Erection System





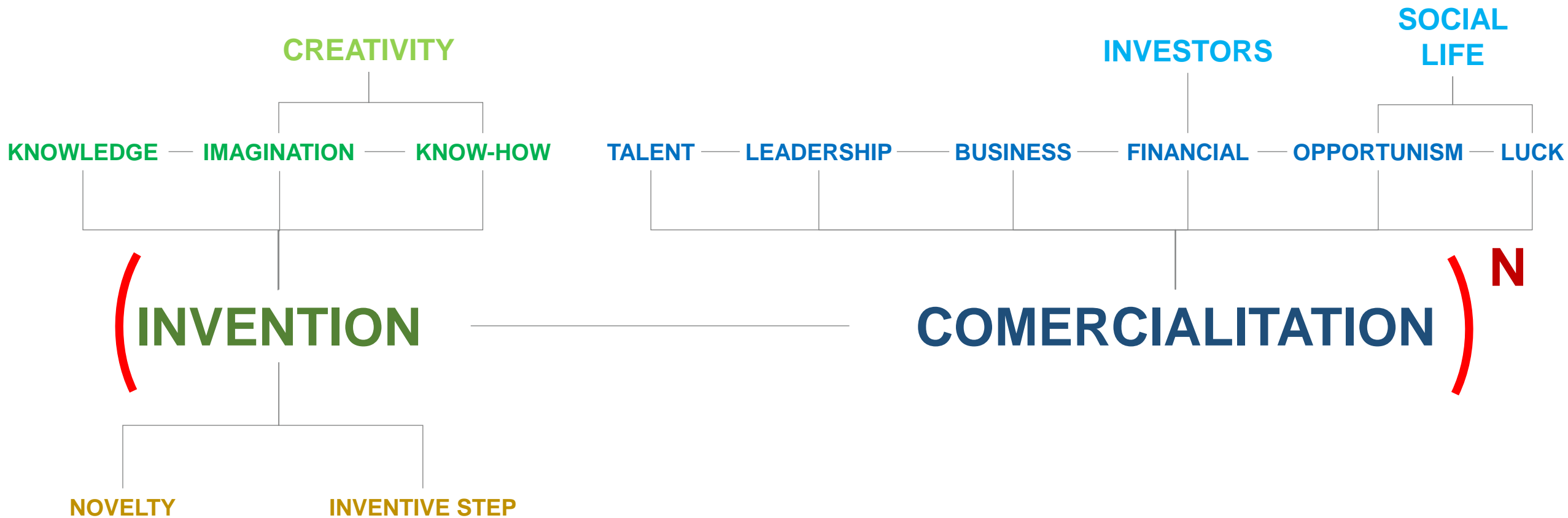
Innovation requires Commercialization

1. Innovation is a process that introduces novelties and refers to modifying existing elements in order to improve them
2. But an innovation will not be such unless it is commercialized, unless it changes how things were done before



2

INNOVATION MANAGEMENT Team Innovation



How to boost innovation

Suppliers



Clusters

ENERCLUSTER
CLÚSTER EÓLICO DE NAVARRA

Public Support



Competitors



Clients



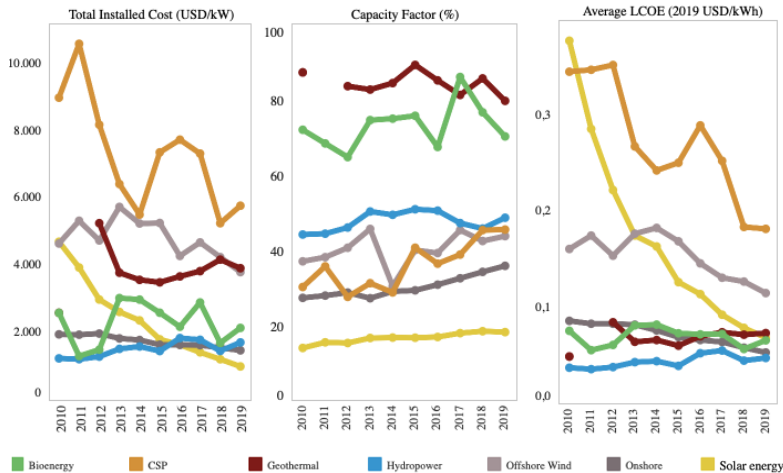
I+D Centers



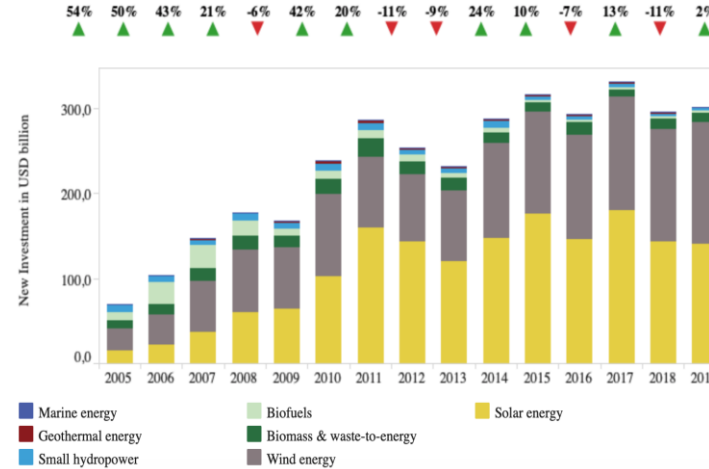
3

WIND ENERGY INNOVATION Global Innovation Trends

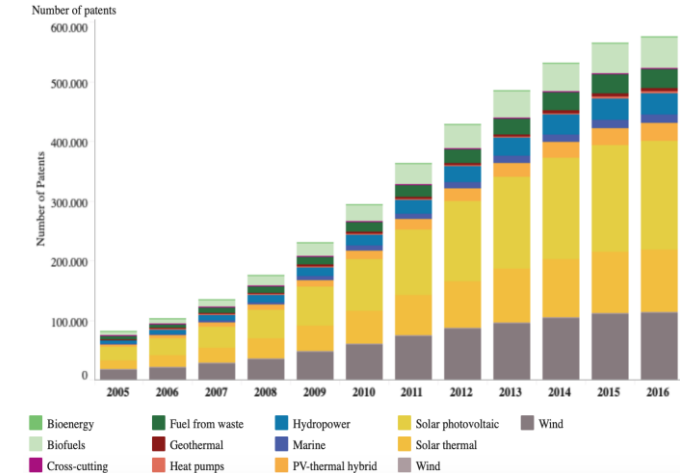
Energy cost



Investment Historic



Patents Historic



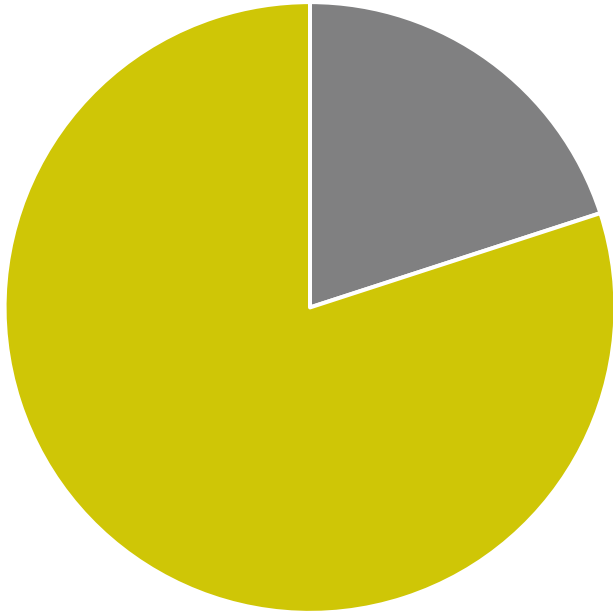
Source: IRENA

2018-2019

- Wind industry registered 1.122 patents (2018-2019)
- Wind industry registered almost 50% of renewables investments
- Solar and wind registered the largest number of patents and investment and also reduced its costs and LCOE the most

How many patents are eventually commercialized?

80% - 20%



We cannot say innovation is expensive, as it brings proven economics benefits

But it might seem a good idea to optimize the process

4

CONCLUSION Summary

- 1. Wind Industry concentrate almost 50% of renewables investment and ranks second in n° of patents after solar energy**
- 2. Wind Energy competitive landscape requires a new innovation approach**
- 3. Open Innovation seems an ideal way to boost innovation within the industry and remain competitive**



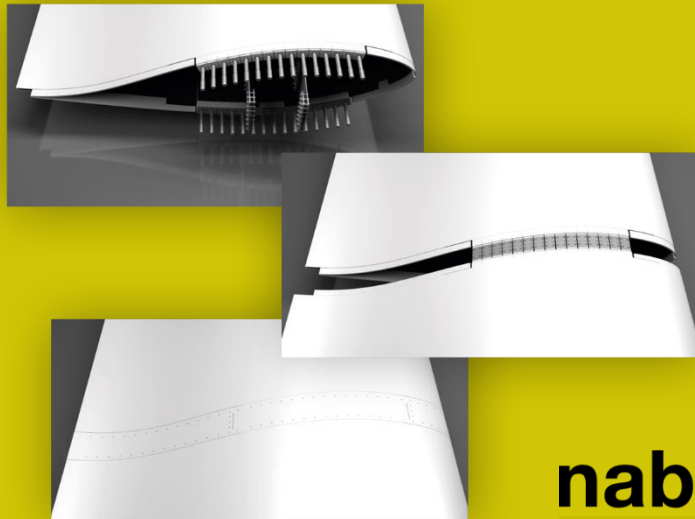
NABRAWIND

ADVANCED WIND TECHNOLOGIES

Thanks for Your Attention

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