Independent service provider - The Real Alternative

Deutsche Windtechnik Inc.

18 June 2019

Deutsche Windtechnik

Agenda

- Introduction to Deutsche Windtechnik
- Independent Service Providers – What makes us different?
- DWT services and US operations outlook
- DWT impact on US market
- Benefits to ISP's

Who is Deutsche Windtechnik?

- Manufacturer-independent multi-brand service provider
- Established in 2004 in Bremen, Germany
- 2017: Subsidiary opened in the USA
- What do we provide?
- What is our goal?

WHY **ISP (Independent Service Provider)?**

Transparency

- Share experience and information to promote learning
- Honest and authentic communication

Independence

- Seven specialist Engineering Departments in house
- No resources extracted for new WTG developments

Agile

- Proactively listening to customers
- Performance driven flexible operation
- Smart planning and execution

Contractual Process

- “A la carte” service options from basic to Full Scope
- Generally more flexible contractual options

Respond to customer needs

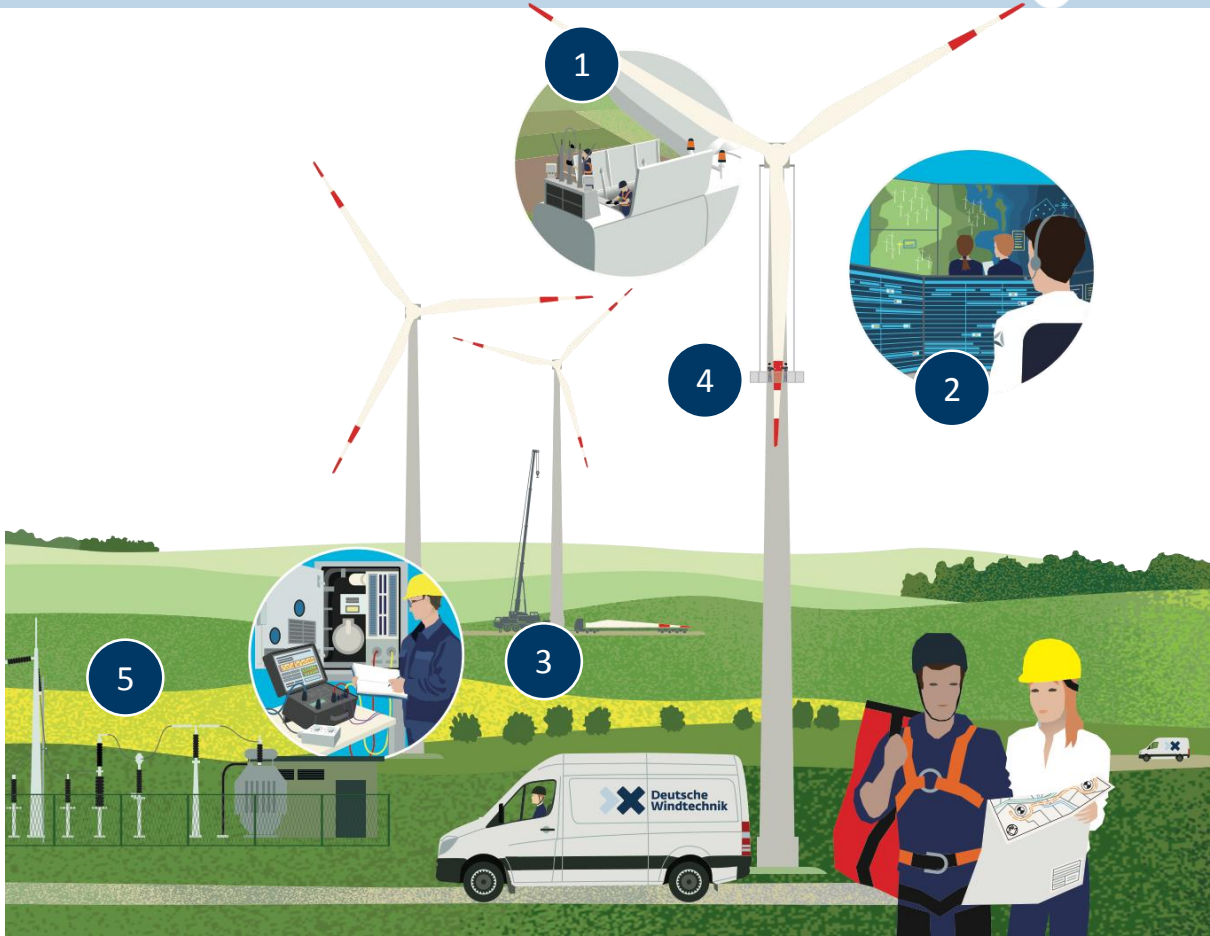
- Treat others as you want to be treated
- Leading by example

Flat Organization

- Increased Efficiency
- Breaking down traditional boundaries
- Attractive employer

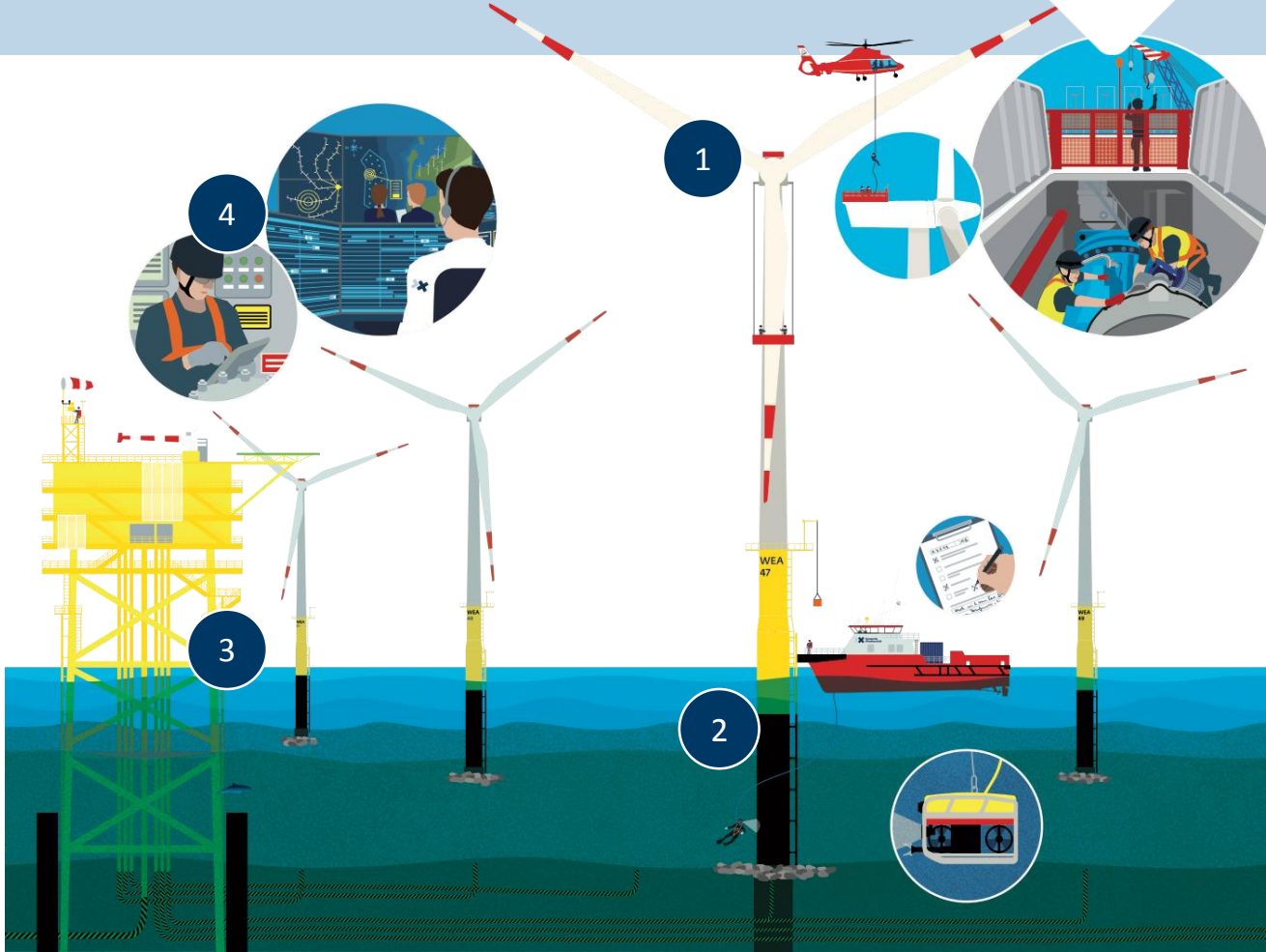
Onshore Services

1. Full Maintenance
2. Remote Data Monitoring
3. Tower and Foundation
4. Rotor Blades
5. Substations



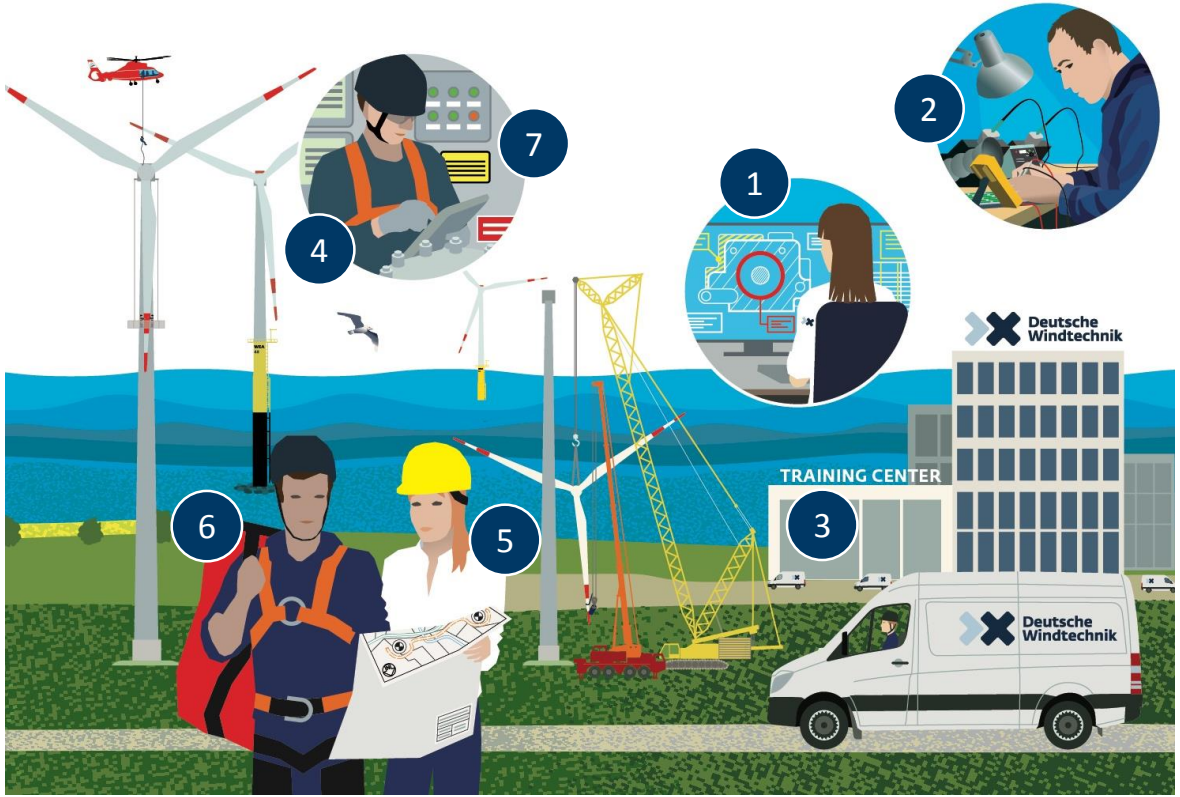
Services Offshore

1. Wind Turbine
2. Foundation incl. transition piece
3. Substation OSS
4. Technical controlling

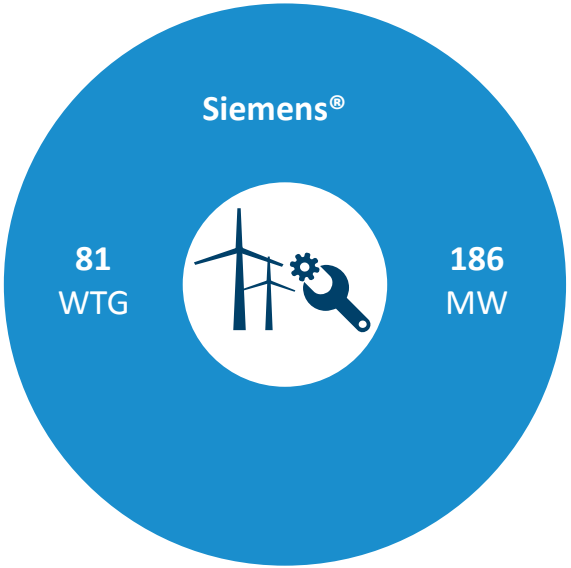


Additional Services

1. Research and Development / Upgrades
2. Control and Power Electronics / Spare Parts ManagementTraining Center
3. Training Center
4. Technical Inspections Program
5. Quality Management and Occupational Health and Safety
6. Safety Technology



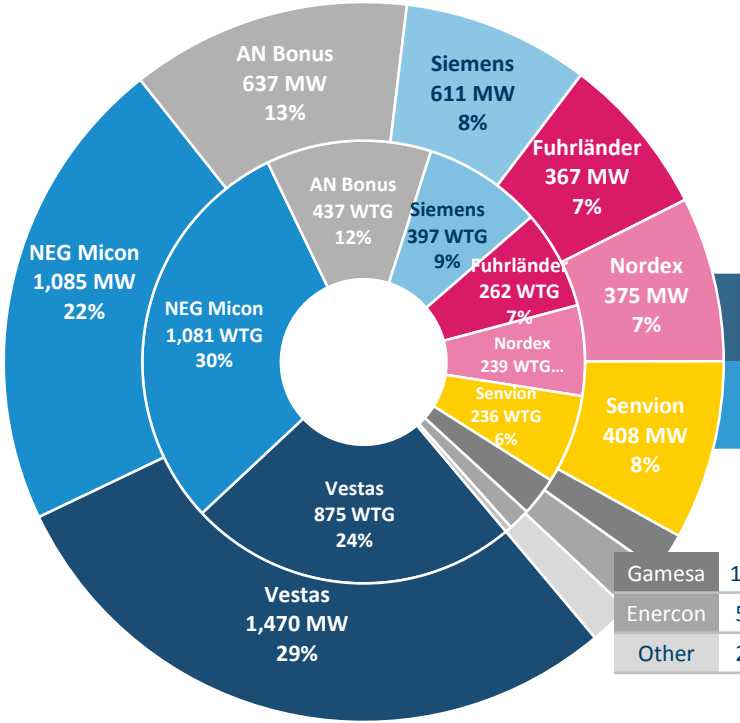
Maintenance Contracts



System expertise in the US:

- Siemens
- Vestas

Worldwide



3,742 WTG

5,456 MW

Gamesa	103 WTG	91 MW
Enercon	58 WTG	110 MW
Other	21 WTG	24 MW

Key Figures

Established 2017

Staff: 32

WTG under Contract: 81

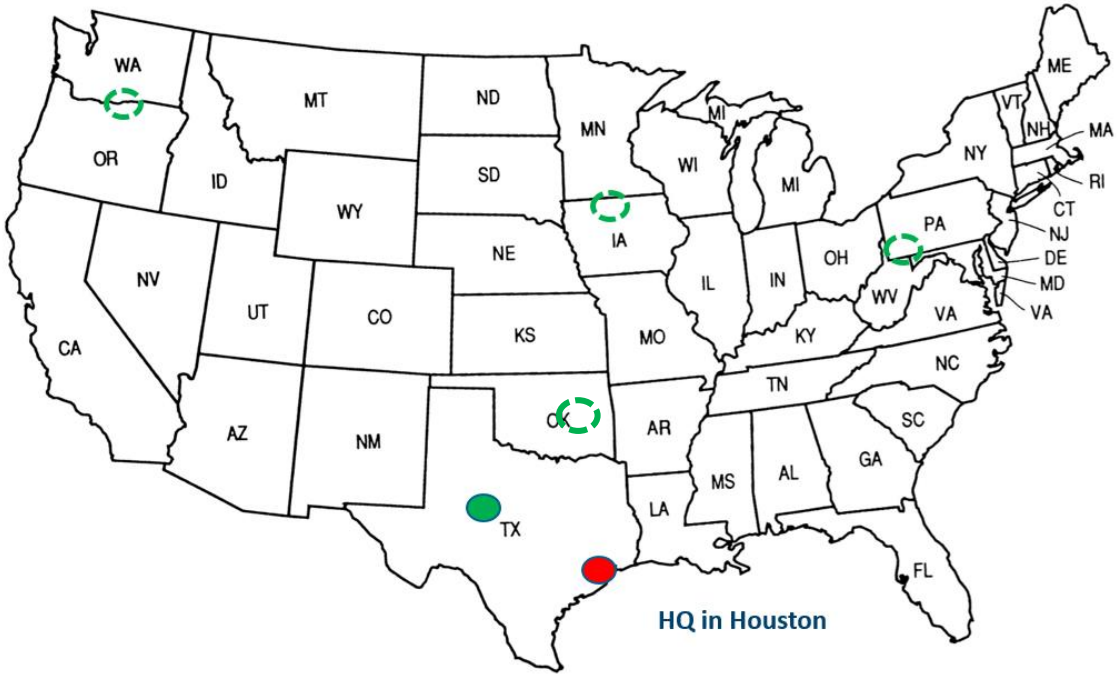
Centers and Service Stations: 3

Technicians: 16

Strategy North America

- **Key Points**

  - Safety and Quality in all we do
  - Regional approach to be close to our customers
  - Vision to become one stop shop for all O&M for our clients

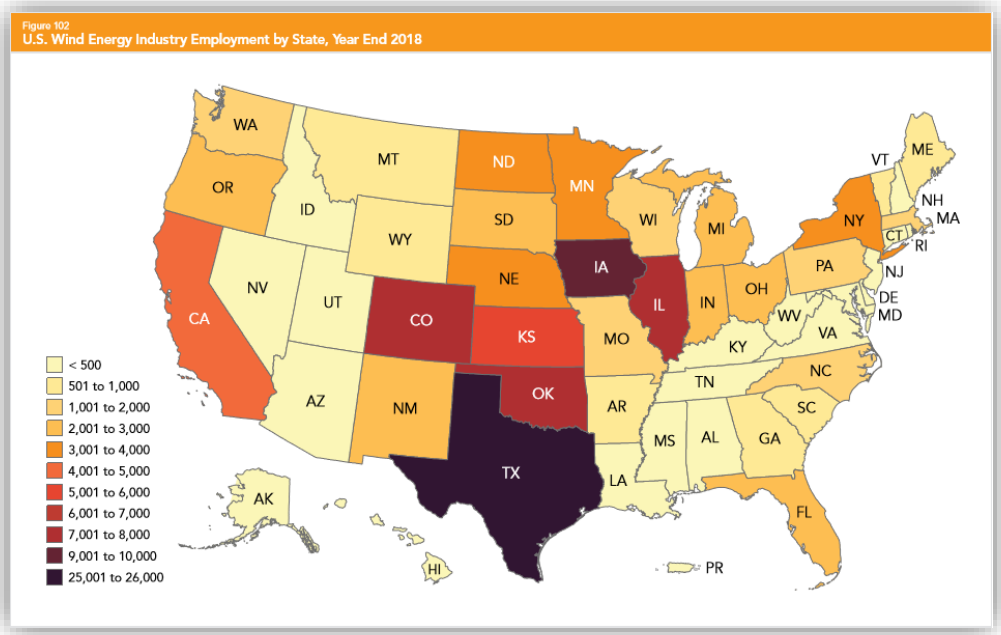


Current Customer Service Office

Planned Customer Service Offices

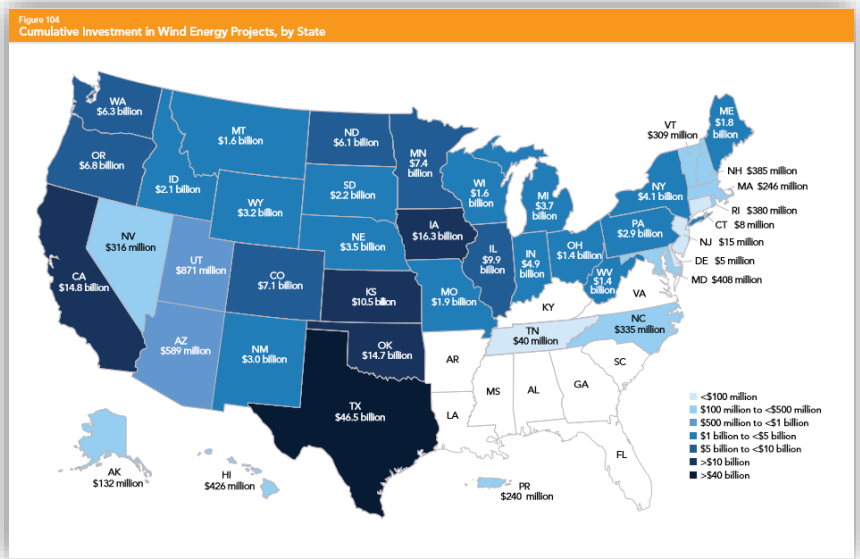
Why US- Creating Jobs

- Economic benefits
- Continued growth
- More than 24,000 wind-related jobs



Economic Benefits

- Especially rural areas benefit from wind projects
- 99% of US wind fleet

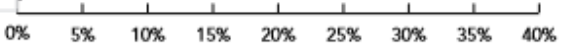


Source: awea.org

Wind Turbine Market Share USA

Figure 79
Wind Turbine Manufacturers' Market Share of U.S. Wind Power Capacity Installed during 2018

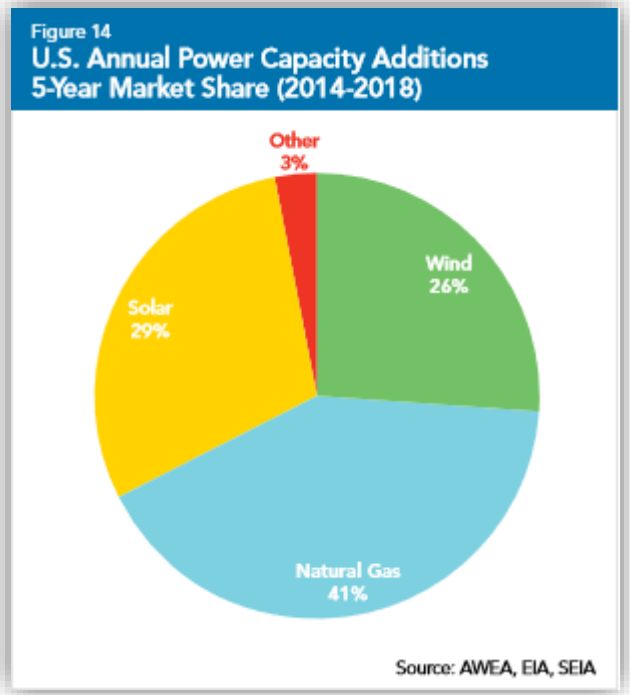
Ranking	Company	Number of Turbines	Capacity (MW)	Percent of 2018 Installations
1	GE Renewable Energy	1,280	3,010	39.7%
2	Vestas	1,231	2,886	38.0%
3	Nordex USA	279	866	11.4%
4	Siemens Gamesa Renewable Energy	253	630	8.3%
5	Goldwind	70	171	2.3%
	Other	10	24	.3%



Source: awea.org

U.S Annual Power Capacity Additions

"Wind power continues to be one of the single largest sources of new electric power capacity in the U.S"



Source: awea.org

Benefits to ISP's-Key Trends in US O&M Market

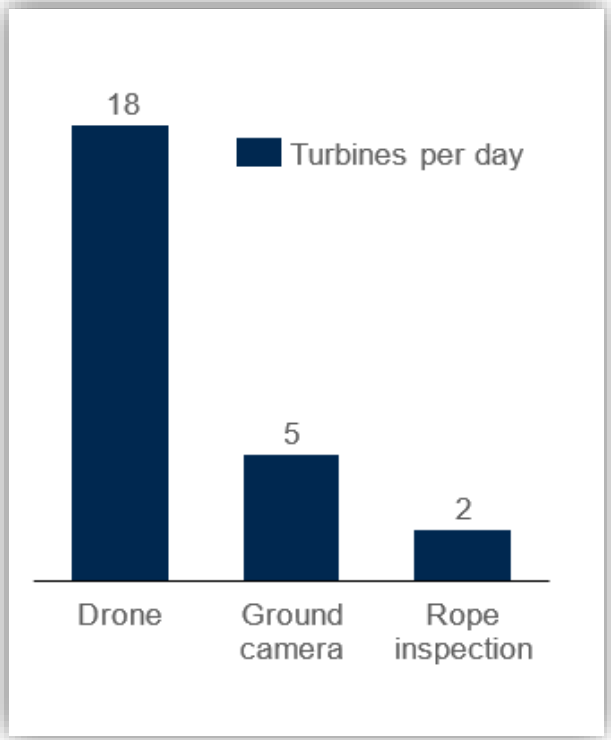
"Market will peak in 2020 as a result of repowering"

Source: Wood Mackenzie Limited

Key Trends in US O&M Market

New technology paves way for reduced labor costs

- Drone Inspections and Deployment
- Up-tower and Crane-less repairs



Source: Wood Mackenzie Limited

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