

Sebenico — Šibenik

Powering and Digitizing the economy

Ivan Paić
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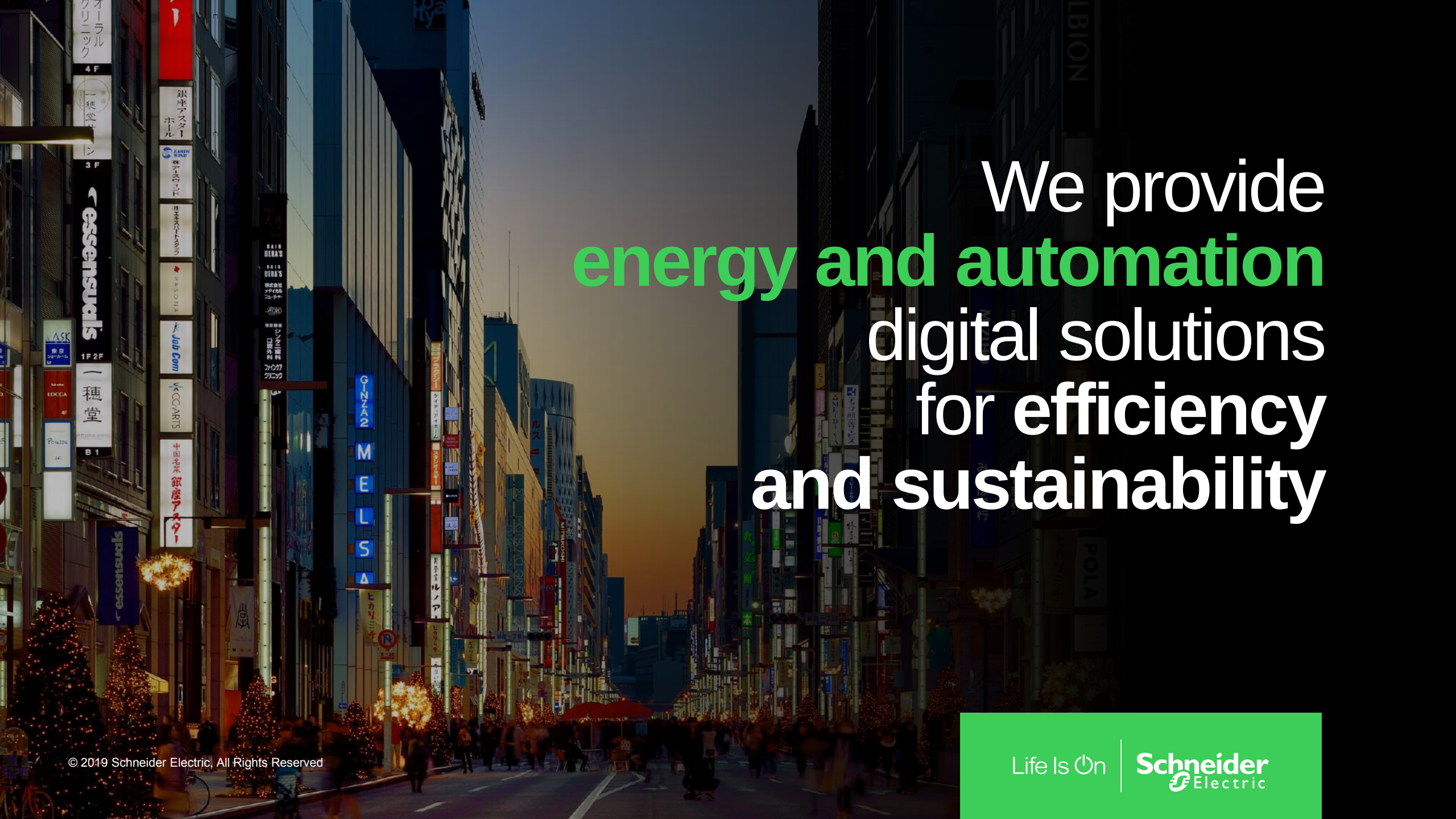
Life Is On

Schneider
Electric





We empower all to make the most
of their **energy and resources** ensuring
Life Is On everywhere, for everyone,
at every moment

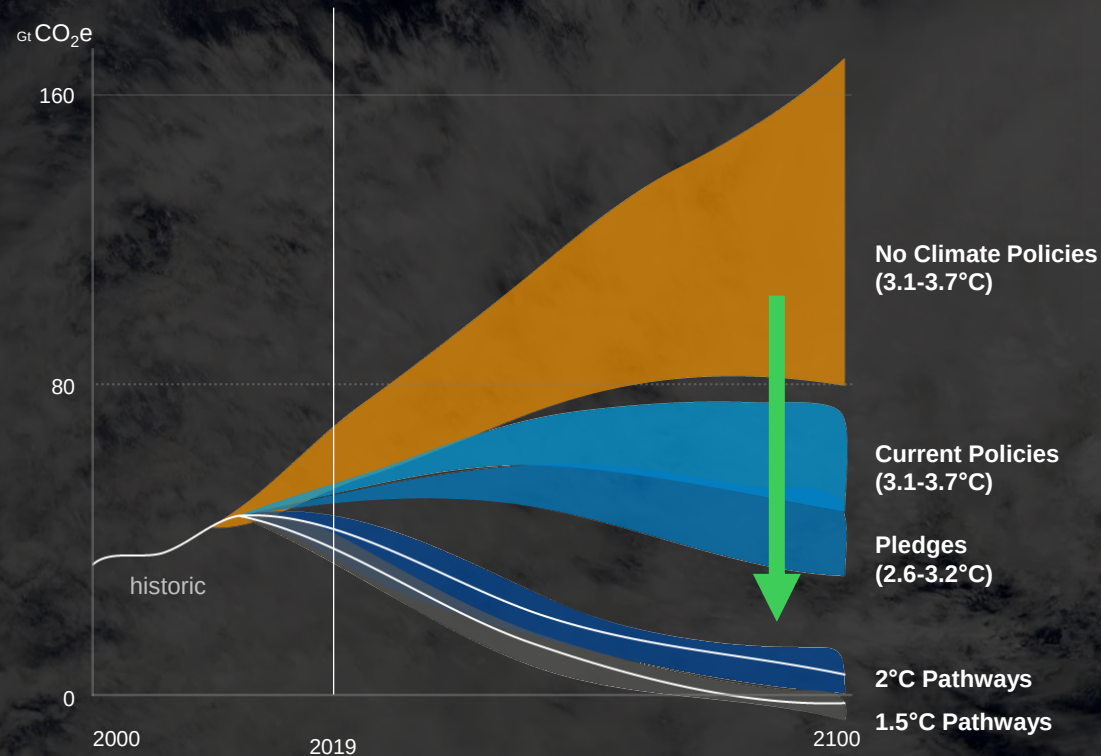


We provide
energy and automation
digital solutions
for efficiency
and sustainability

One Planet

A sense of emergency

Climate change & Earth Overshoot Day



>80% Total CO₂ emissions
Energy Issue

40% More energy consumed
by 2100 vs 1900
Unbearable Trend

60% Current fossil-based end to end
energy system losses
inefficient

Sources: IEA, Schneider Electric

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Energy Transition

disruptions

Digital



Energy
Efficiency

Savings

Electrification

Decarbonization

Efficiency

For a Sustainable Future

Process
Efficiency

Sustainability

Asset Performance

Productivity

Efficiency

Make It Possible: -50% CO₂ by 2040 ahead

Save

30% - 50%

efficiency in buildings
vs historical stock

50%

of the stock

Electrify

2x

efficiency vs other sources
(building heat, road transport)

Decarbonize

6% → 40%

electricity from Wind / Solar by 2040

FUTURE

It's time to go SF6 free

A unique opportunity for MV business to do a step up in term of sustainability, safety and health...

from SF6 to zero gas



Secondary Switchgear



Ring Master Unit



Switch Primary Gear Unit



PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

• “We are committed to solving the SF6 issue with new alternatives in five years and to eliminating SF6 from Schneider Electric products in 10 years”

- Jean-Pascal Tricoire
- Chairman & CEO Schneider Electric
- Speaking in 2015

Moving away from SF6 is more than a technological change...



...it requires a shift in mindset

Since 2009, we have been working on SF6 alternatives, we have been very active inside T&D Europe Association and we communicate regularly at international events such as CIRED or CIGRE

We believe that moving away from SF6 must benefit both to our industry and our society.

We consider that we cannot afford taking risk by choosing unproven solutions.

We strongly believe in three principles...



Stop breaking in gas
to mitigate health and
safety issues linked to the
gas itself and to the by-
products

The best gas is air
although there are some
limitations in term of
dielectric capacity

**Pick a green, safe and
proven gas**
to ensure the dielectric
function when air is not
relevant anymore

DIGITAL



We have to make the most of the SF6-free transition...

...by addressing four critical concerns :



Cost efficiency
for our customers



Improved **sustainability**



Peace of mind for
health and safety



Responsible **installed base** management

Digital innovation is thriving at **breakneck speed**

IoT

35%

of 5G apps in the manufacturing and utilities sectors

**GSMA 2019*

Big Data

> 5x

generated data from 33 ZBs today to 175 ZBs by 2025

**IDC, 2018*

AI

6x

worldwide spending on cognitive and AI systems btw 2017 & 2022

** International data corporation*

THINK ABOUT IT

DER integration.

What if you could integrate endless DER and supply green energy at superior consumer value, while minimizing investments and strengthening grid safety, reliability, and efficiency?

Grid operators in wind-abundant and solar-rich geographies face challenges in planning and operations. In these markets, management of DERs is already one of the primary motivating factors for further smart grid investment.

THINK ABOUT IT



Changing Revenue Model.

What if you could put off capital investments and slash O&M costs, while smoothly adopting a model that solidifies your utility's future?

Decentralization challenges the traditional CAPEX-based revenue model and boosts capital investment requirements. Balancing incentives and penalties for financial risk mitigation is a growing concern.

THINK ABOUT IT

Network losses.

What if you could cut network losses and supply energy at a fairer cost?

Total worldwide T&D losses amount to \$200Bn per year. In Europe alone, annual electric distribution losses represent 5 billion Euros in waste.

THINK ABOUT IT

A self-immune grid.

What if you could shrink the impact of severe weather events with real-time information, fast automation, and integrated outage response?

The average annual economic cost of power outages caused by severe weather in the U.S. is \$18-33B—and even higher as the weather gets worse.

THINK ABOUT IT

Digital grid management.

What if you could leverage artificial intelligence to optimize grid operations and planning?

The utility of tomorrow must be data-obsessed. It requires several technologies within its intelligence or analytics layer and within the underlying infrastructure.

THINK ABOUT IT

Cyber risk.

What if you took a holistic, multi-faceted, risk-based approach to fight cyber attacks that can damage or destroy key network assets?

54% of energy companies suffered a cybersecurity incident in 2017. The same year, a survey of over 600 sector executives revealed that security issues were their most pressing concern.

THINK ABOUT IT

The new energy consumer.

What if you could offer an online platform for customer services such as a streamlined application process for connecting DER?

Distribution utilities are increasingly aware of the need to improve customer experience and mitigate associated financial risks.

THINK ABOUT IT

The new energy consumer.

What if you could turn prosumer into partners with comprehensive behind-the-meter services?

What if you could organize and operate local energy communities?

The grid edge shopping spree is on. Energy players are recognizing the importance of developing DER offerings as the economics of distributed energy projects become increasingly competitive. Utility-branded DER marketplaces are one key ingredient.

THINK ABOUT IT

Data as the new energy.

What if you could create data-driven relationships with your customers and fend off commoditization by new players, such as digital B2C giants who could offer free energy in exchange for personal data?

The revolutions in digital technology and power technology are a recipe for sweeping customer empowerment. Information has become more important than material assets. The threats to utilities from digital pioneers are real.

Prepare Marathon ?

How to increase efficiency



A **machine**



A set of **sensors** with just enough **local HMI**

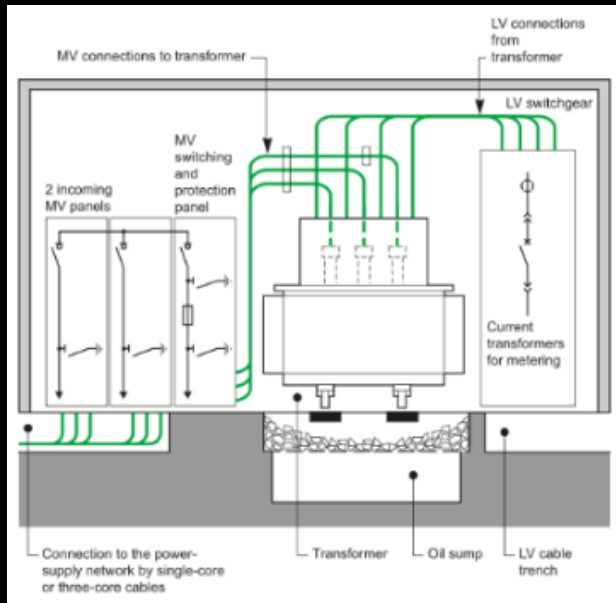


A **connected apps** for historian, alarming and insights.

Pilot a substation ?

How to increase efficiency

**ASSET
CONNECT**

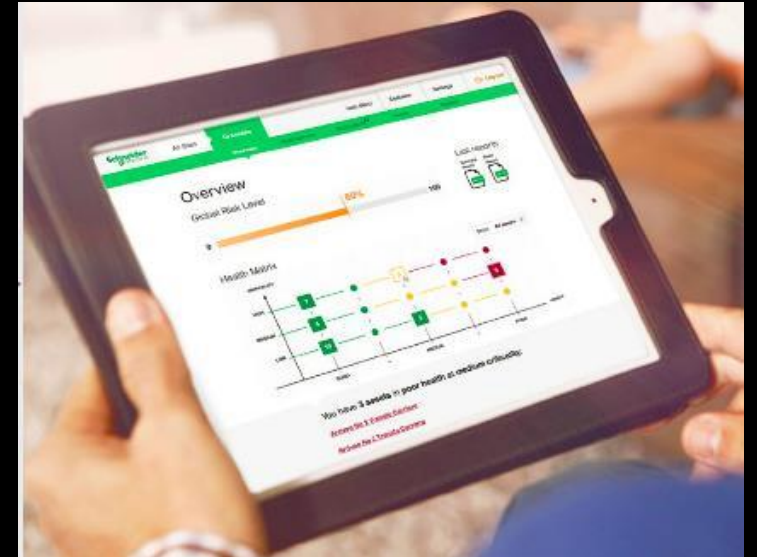


A **machine**



A set of **sensors**
with just enough
local HMI

**ASSET
CONNECT**



A **connected apps** for historian,
alarming and insights.

**ASSET
ADVISOR**



3D+E equation redefining the energy world...

More ELECTRIC

48%

increase electricity demand in 2040
compared to 2020

Source : IEA WEO 2014

More DIGITIZED

10X

more increase connected devices
than connected people
by 2020

Source : Cisco, Internet World Statistics, Mc Kinsey

More DECARBONIZED

86%

of investments in Power
Generation till 2040 will
be in zero-carbon fuels

Of which 71% in Wind,
Solar and Hydro

Source : BNEF 2017

More DECENTRALIZED

12%

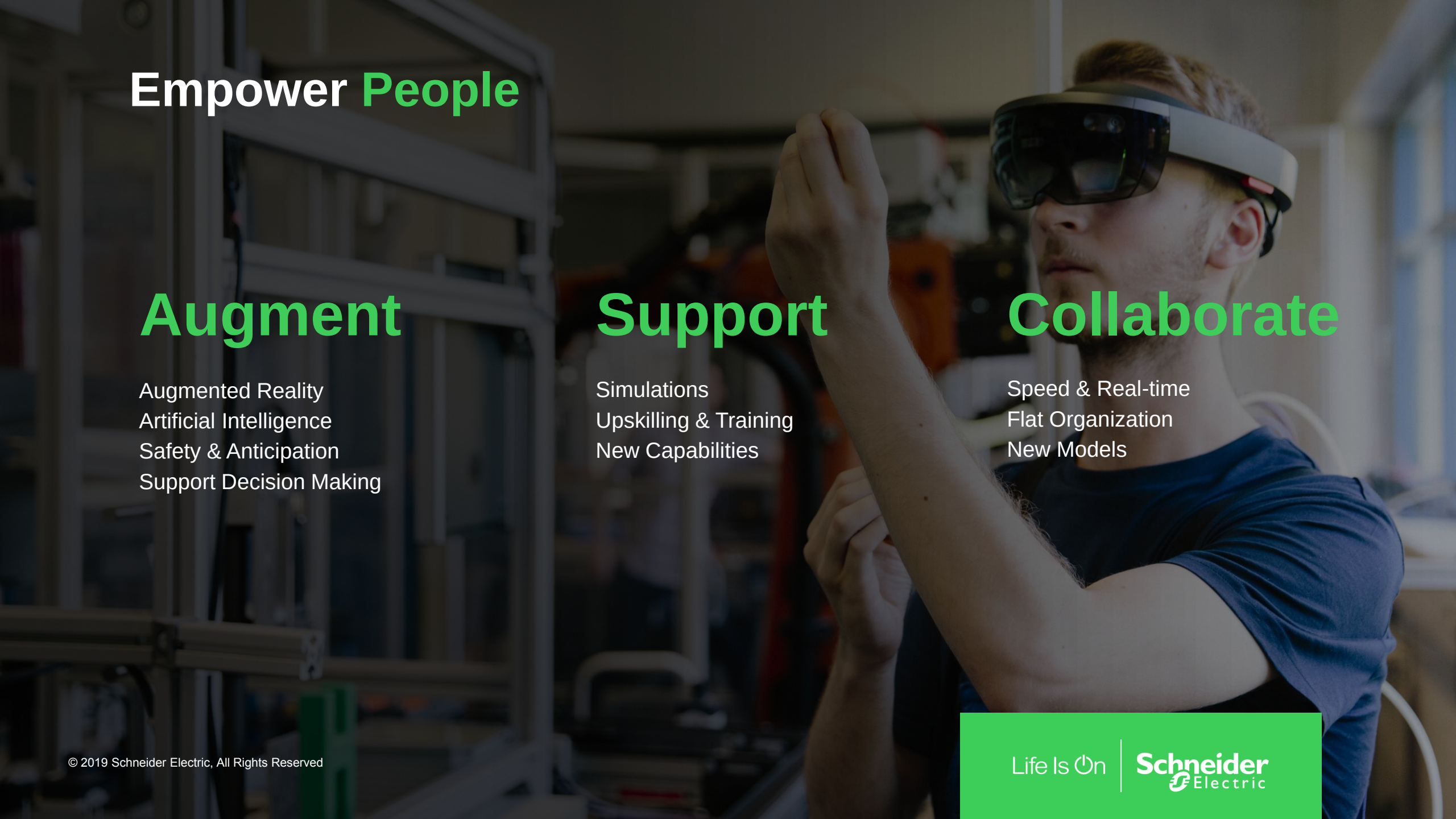
of generating capacity
from DG in 2025

65% of DG investments
will be distributed Solar PV

Source : Frost & Sullivan

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Empower **People**

Augment

Augmented Reality
Artificial Intelligence
Safety & Anticipation
Support Decision Making

Support

Simulations
Upskilling & Training
New Capabilities

Collaborate

Speed & Real-time
Flat Organization
New Models

Open

Network of Partners

20k+

system developers & integrators

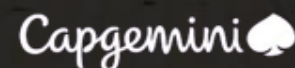
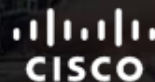
3k

electricity companies

650k

service providers & partners

Strategic Technology Partners



Open Standards

Open Tech & Interoperability



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