



SUSTAINABLE DEVELOPMENT GOALS AND ELECTROTECHNICAL STANDARDS

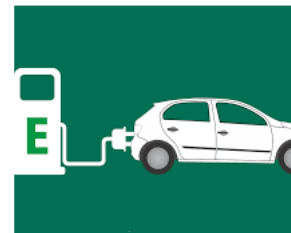
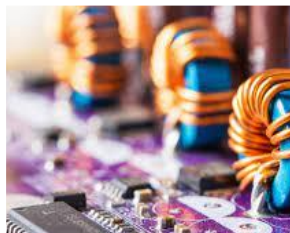
Indian Standards, for a safer and sustainable future



Electrotechnical Division Council (ETDC)

SCOPE-

- Standardization of Electrotechnical aspects of generation, transmission, distribution, storage and utilization of electrical energy, including renewable energy.
- It includes all aspects of electro technology such as electrical products and installations, insulation, power electronics, industrial/process automation, measuring instruments, Electrotechnical aspects of e-mobility, and system level standardization addressing safety, security, sustainability, efficiency while delivering societal value.





SUSTAINABLE DEVELOPMENT GOALS



7 AFFORDABLE AND
CLEAN ENERGY



7 AFFORDABLE AND
CLEAN ENERGY





- ETD 28

Solar Photovoltaic Energy Systems Sectional Committee

- ETD 42

Wind Turbines Sectional Committee

- ETD 50

LVDC Power Distribution Systems Sectional Committee

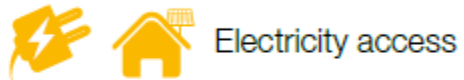
- ETD 52

Electrical Energy Storage Systems Sectional Committee

Energy – the golden thread



Power generation



Electricity access



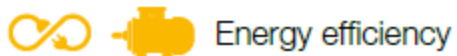
Power distribution



Lighting



Transportation



Energy efficiency



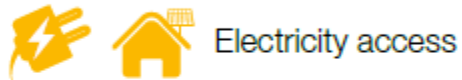
• ETD 28

Solar Photovoltaic Energy Systems Sectional Committee

Energy – the golden thread



Power generation



Electricity access



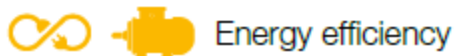
Power distribution



Lighting



Transportation



Energy efficiency

| | |
|----------------------------------|------------------------------------------------------------------|
| IS 14286 series of standards | Terrestrial PV Modules (Design Qualification) |
| IS 16221 series of standards | Safety of Power Converters for use in Photovoltaic Power Systems |
| IS/IEC 61730 series of standards | Photovoltaic PV Module (Safety Qualification) |

7 AFFORDABLE AND
CLEAN ENERGY



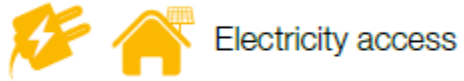
• ETD 42

Wind Turbines Sectional Committee

Energy – the golden thread



Power generation



Electricity access



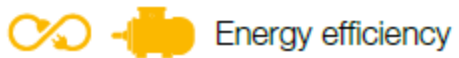
Power distribution



Lighting



Transportation



Energy efficiency

IS/IEC 61400 series of standards

Wind Turbines

7 AFFORDABLE AND
CLEAN ENERGY



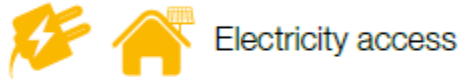
• ETD 50

LVDC Power Distribution Systems Sectional Committee

Energy – the golden thread



Power generation



Electricity access



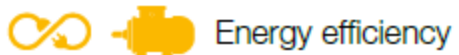
Power distribution



Lighting



Transportation



Energy efficiency

IS 16711 : 2017

48 V ELVDC Distribution System - Guidelines



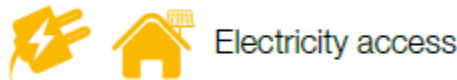
• ETD 52

Electrical Energy Storage Systems Sectional Committee

Energy – the golden thread



Power generation



Electricity access



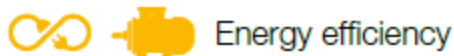
Power distribution



Lighting



Transportation



Energy efficiency

IS 17067 (Part 1) : 2018

Electrical Energy Storage Systems Part 1 Vocabulary


IS 17092:2019

Electrical Energy Storage Systems-Safety
Requirements



7 AFFORDABLE AND
CLEAN ENERGY



**ENSURE ACCESS TO
AFFORDABLE, RELIABLE,
SUSTAINABLE AND MODERN
ENERGY FOR ALL** 

GLOBALLY



12.6%

**STILL LACK ACCESS TO
MODERN ELECTRICITY**

ENERGY ACCOUNTS
FOR ROUGHLY

2/3

**OF GLOBAL GREENHOUSE
GAS EMISSIONS**

IN INDIA

NEARLY
84.5%
PEOPLE HAVE ACCESS
TO ELECTRICITY



100%
VILLAGES
ELECTRIFIED



**POWER CABLES FROM THE GRID
HAVE REACHED A TRANSFORMER
IN EACH VILLAGE**

**BUT 31 MILLION HOUSES STILL
LACK ACCESS TO ELECTRICITY**

INDIA'S AMBITIOUS TARGETS

- Increasing renewables capacity to **500 GW** by 2030,
- Meeting **50%** of energy requirements from renewables,
- Reducing cumulative emissions by one billion tonnes by 2030, and
- Reducing emissions intensity of India's gross domestic product (GDP) by **45%** by 2030.



Over 45,000 installations in the States of Assam, Rajasthan, Manipur, J&K and Meghalaya

Energy is the golden thread that connects economic growth, increased social equity, and an environment that allows the world to thrive'
Ban Ki-Moon, Former United Nations Secretary-General



Energy is opportunity. It transforms lives. Economies. And our planet.

9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE





Resilient infrastructure
and sustainable
industrialization



Innovation



Knowledge and
technology transfer



Hazardous materials and
waste control



Sustainability,
efficiency



Quality & risk
management

- ETD 44

Safety of Machinery- Electrotechnical Aspects Sectional
Committee

- ETD 51

Electrotechnology in Mobility Sectional Committee



- ETD 44

Safety of Machinery- Electrotechnical Aspects Sectional Committee

Resilient infrastructure and sustainable industrialization



Innovation



Knowledge and
technology transfer



Hazardous materials and
waste control



Sustainability,
efficiency



Quality & risk
management

| | |
|------------------------------|----------------------------------------------------------------------------------------------------|
| IS 16502 series of standards | Safety of Machinery - Electro-Sensitive Protective Equipment |
| IS 16504 series of standards | Safety of Machinery - Electrical Equipment of Machines |
| IS 16936 : 2018 | Safety of Machinery Guidelines for the Use of Communication Systems in Safety Related Applications |



- ETD 51

Electrotechnology in Mobility Sectional Committee

Resilient infrastructure and sustainable industrialization



Innovation



Knowledge and
technology transfer



Hazardous materials and
waste control



Sustainability,
efficiency



Quality & risk
management

IS 17017 series of
standards

Electric Vehicle Conductive charging System

IS/ISO 15118 series of
standards

Road Vehicle – Vehicle to Grid Communication



9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



IN INDIA

111

MILLION

PEOPLE EMPLOYED
IN MICRO, SMALL
AND MEDIUM
ENTERPRISES
PRODUCE

33%

OF THE
MANUFACTURING
OUTPUT

566

MILLION INTERNET
SUBSCRIBERS
(MOBILE AND LANDLINE)



1.80 MT ONE OF THE LOWEST
PER CAPITA CO2 EMISSIONS
IN THE WORLD

**BUILD RESILIENT
INFRASTRUCTURE, PROMOTE
INCLUSIVE AND SUSTAINABLE
INDUSTRIALISATION, AND
FOSTER INNOVATION**

GLOBALLY

14.2%

OF THE WORLD'S WORKFORCE
EMPLOYED IN MANUFACTURING

1.1 MANUFACTURING
JOB CREATES
2.2 JOBS IN OTHER SECTORS



GDP GROWTH
AVERAGED

7.2%

BETWEEN
2018 - 2019



**MANGALYAAN IS THE
WORLD'S LEAST EXPENSIVE
INTERPLANETARY MISSION
TO MARS**



Challenges in Indian Scenario

Sustainable Development Goal #9

Innovation and Infrastructure

Building a simple foot bridge between rural communities can increase new business **growth by 15%.**

11 SUSTAINABLE CITIES
AND COMMUNITIES



11 SUSTAINABLE CITIES
AND COMMUNITIES



11 SUSTAINABLE CITIES AND COMMUNITIES



Sustainable urbanization



Clean water

Electricity access

Lighting

Healthcare

Safe food

Transportation

ICT

Electrical safety

Water & waste management

Resilience

Efficiency

Sustainability

- ETD 13

Equipment for Electrical Energy Measurement and Load Control Sectional Committee

- ETD 23

Lamps and related Equipments Sectional Committee

- ETD 49

Illumination Engineering and Luminaries Sectional Committee

11 SUSTAINABLE CITIES AND COMMUNITIES



Sustainable urbanization

-  Clean water
-  Electricity access
-  Lighting
-  Healthcare
-  Safe food
-  Transportation
-  ICT
-  Electrical safety
-  Water & waste management
-  Resilience
-  Efficiency
-  Sustainability

• ETD 13

Equipment For Electrical Energy Measurement And Load Control Sectional Committee

IS 16444 series of standards

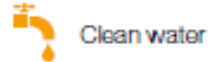
Smart Meters



- ETD 23

Lamps and related Equipments Sectional Committee

Sustainable urbanization



Clean water



Electricity access



Lighting



Healthcare



Safe food



Transportation



ICT



Electrical safety



Water & waste
management



Resilience



Efficiency



Sustainability

IS 16102 series of standards

LED Lamps for General Lighting Services

IS 16103 series of standards

LED Modules for General Lighting

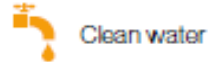
11 SUSTAINABLE CITIES AND COMMUNITIES



• ETD 49

Illumination Engineering and Luminaires Sectional Committee

Sustainable urbanization



Clean water



Electricity access



Lighting



Healthcare



Safe food



Transportation



ICT



Electrical safety



Water & waste management



Resilience



Efficiency



Sustainability

IS 10322 series of standards

Luminaires

IS 16107 series of standards

Luminaires performance



11 SUSTAINABLE CITIES AND COMMUNITIES



MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT, AND SUSTAINABLE

GLOBALLY

MORE THAN HALF OF HUMANITY LIVES IN CITIES TODAY



AND BY 2030, 6 OUT OF 10 PEOPLE WILL LIVE IN CITIES



IN INDIA

BY
2030

INDIA WILL HAVE 7 MEGACITIES WITH POPULATIONS OVER

10
MILLION



31%
LIVE IN URBAN AREAS

17%

OF URBAN POPULATION LIVES IN SLUMS



13%

OF URBAN HOUSEHOLDS DON'T HAVE SANITARY TOILETS



62

MILLION
TONNES PER ANNUM WASTE GENERATED IN CITIES

OVER

1.2 MILLION

POLLUTION RELATED DEATHS IN 2017



DECADE OF ACTION



T

Together

E

Everyone

A

Achieves

M

Move

**Partnerships,
collaborations,
overlaps**



Taking responsibility today for a sustainable tomorrow



Image adapted from <https://www.flickr.com/photos/jfgallery/>

Thank You

