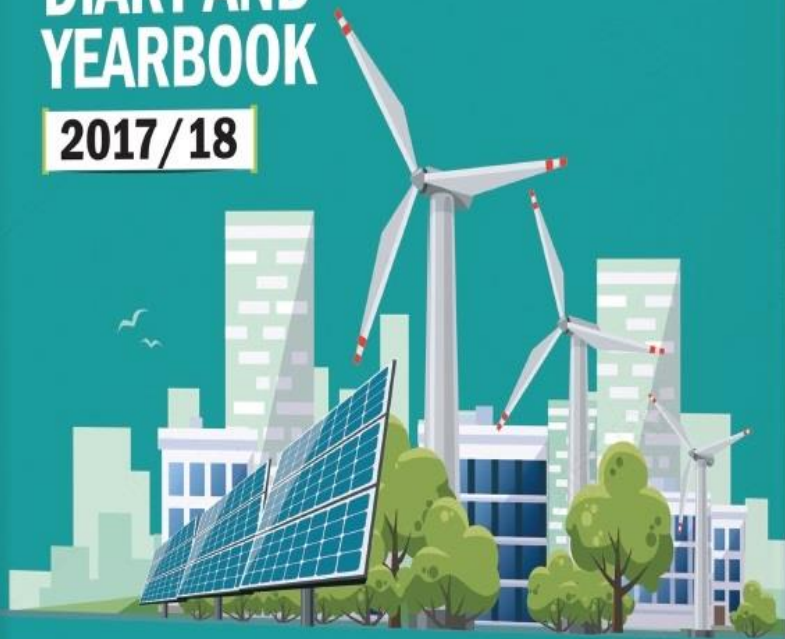


TERI ENERGY & ENVIRONMENT DATA DIARY AND YEARBOOK

2017/18



teri THE ENERGY AND
RESOURCES INSTITUTE
Creating Innovative Solutions for a Sustainable Future



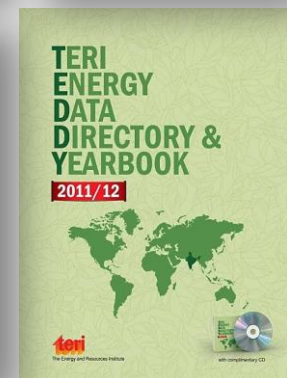
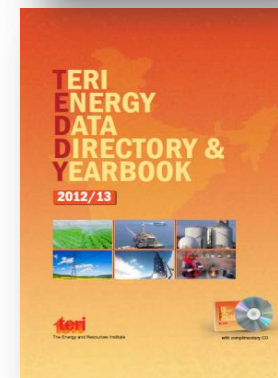
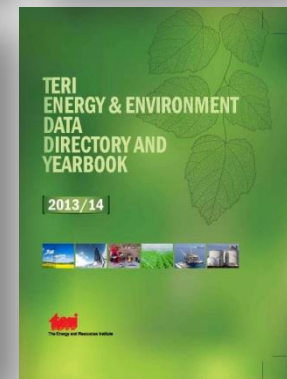
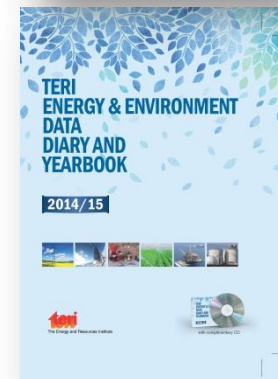
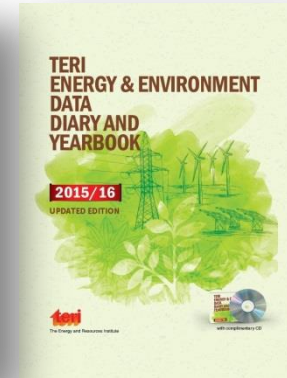
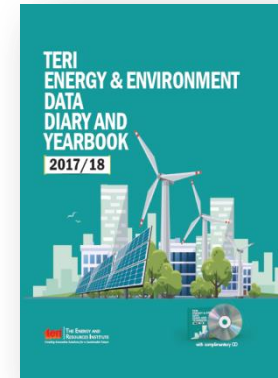
with complimentary CD

April 2019
**The Energy and Resources
Institute**



About TEDDY

- ❖ TERI's flagship annual publication since 1986
- ❖ Compilation of **energy and environment related data** from various **credible sources**
- ❖ **Latest Edition** : TEDDY 2017/18
- ❖ The only comprehensive energy and environment yearbook in India
- ❖ More than **15,000 readers** across the globe
- ❖ **Citations** in international peer reviewed journals and reports
- ❖ **Sankey diagram** showing commercial energy flow in India
- ❖ Provides a review of **government policies, programmes and initiatives** that have implications for environment and energy sectors of the Indian economy



Acknowledging the team

Contributors

- Senior advisors
- **25** authors
- **16** reviewers
- Different divisions across TERI
 - Research
 - Executive support
 - TERI Press
 - Knowledge Management

Overall Guidance

Ajay Shankar

Editor

Aastha Sharma

Sub-Editor

Monica Dutta

Chapter Authors and Reviewers

Energy and environment: an overview

Authors : Aastha Sharma, Monica Dutta, and Adithya Subramanian

Reviewers : Divya Datt and Ritu Mathur

Coal and lignite

Author : Jonathan Donald Syiemlieh

Reviewer : Nitya Nanda

Petroleum and natural gas

Author : G Renjith

Reviewer : K Ramanathan

Power

Author : Snekalatha A Krishnaraju

Reviewers : A K Saxena and Veena Aggarwal

Renewable energy

Authors : Nagendra Kumar, Ashwini G Mudgal, and Kapil Muddineni

Reviewer : Shirish S Garud

Agriculture

Author : Manish Anand

Reviewer : Vibha Dhawan

Industry

Author : Sachin Kumar

Reviewer : Prosanto Pal

Transport

Author : Aakansha Jain

Reviewer : Shri Prakash

Household energy

Authors : Martand Shardul and Deborshi Brahmachari

Reviewer : Debajit Palit

Air quality and pollution

Authors : Arindam Datta, Md Hafizur Rahman, and Isha Khanna

Reviewer : R Suresh

Solid waste management

Authors : Sourabh Manuja and Pallavi Gulati

Reviewer : Suneel Pandey

Water resource management

Authors : Nathaniel B Dkhar and Niyati Seth

Reviewer : Anshuman

Land and forest resource management

Authors : Priyanka and Yatish A Lele

Reviewer : Jitendra Vir Sharma

Climate change

Authors : K Venkatramana and Aanchal Pruthi

Reviewer : Suruchi Bhadwal

Maps

Vijay Nipane

Executive Support

Lakshmi Subramaniam

Documentation

Library and Information Centre, TERI

Publishing Team

Aman Sachdeva

Anupama Jauhry

Sachin Bhardwaj

Shashi Bhushan

Sushmita Ghosh

Information Dissemination

Gitesh Sinha

Sanjeev Sharma

CD Publishing

Rajiv Sharma

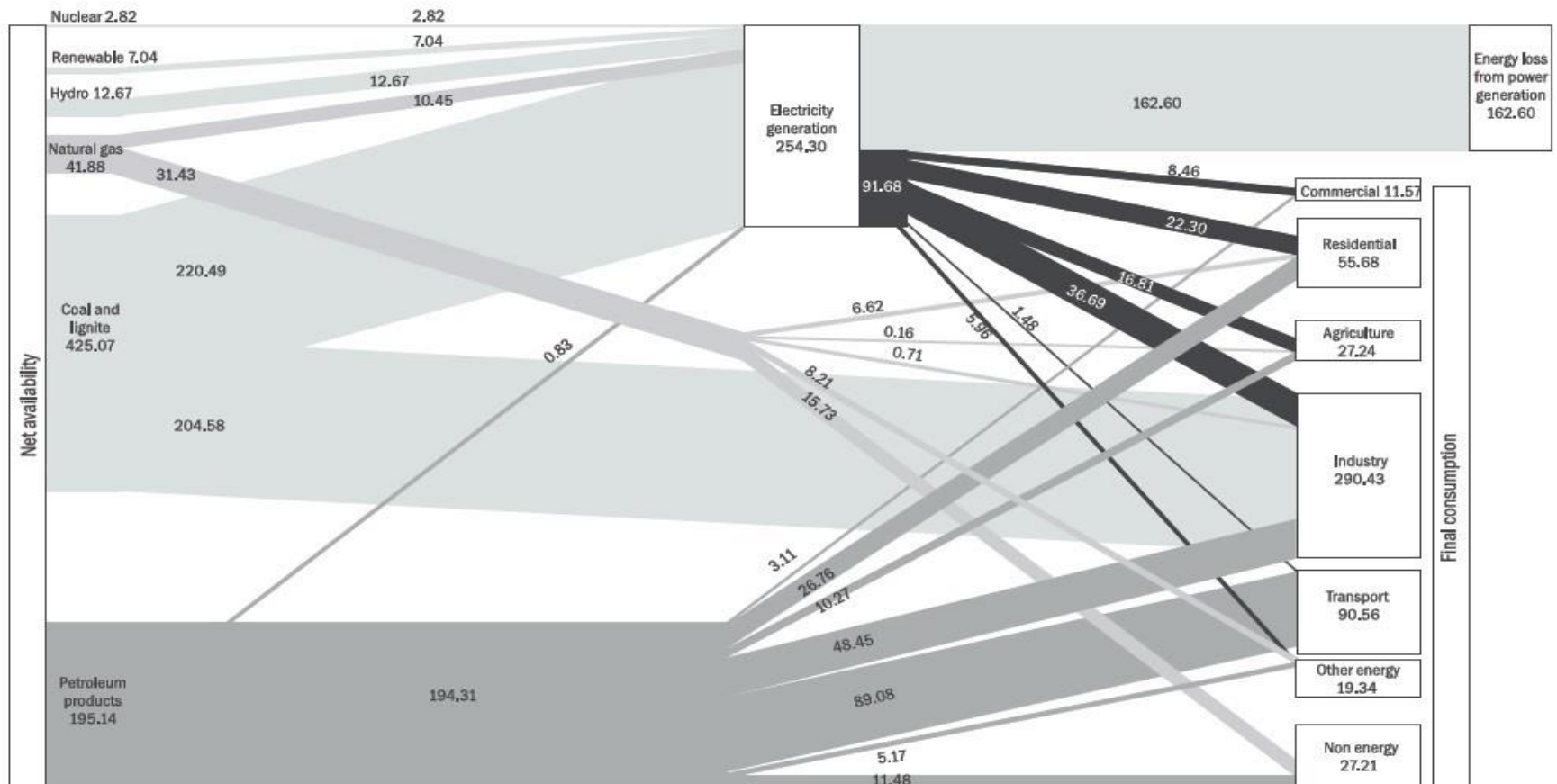
TEDDY 2017/18 (Table of Contents)

Chapter Number	Chapter Title
Chapter 1	Energy and environment: an overview
Energy supply	
Chapter 2	Coal and lignite
Chapter 3	Petroleum and natural gas
Chapter 4	Power
Chapter 5	Renewable energy
Energy demand	
Chapter 6	Agriculture
Chapter 7	Industry
Chapter 8	Transport
Chapter 9	Household Energy
Local and global environment	
Chapter 10	Air quality and pollution
Chapter 11	Solid waste management
Chapter 12	Water resource management
Chapter 13	Land and forest resource management
Chapter 14	Climate change

Highlights of TEDDY 2017/18

Sankey diagram for commercial energy flows

- For electricity generation almost **91%** of the fuel comes from **hydrocarbon sources (coal, natural gas and petroleum)**.
- In terms of final energy consumption, **industry (56.00%), transport (17%) and residential & commercial (13%)** are the top three consuming sectors.



Sankey diagram for 2016/17

MTOE - million tonnes of oil equivalent

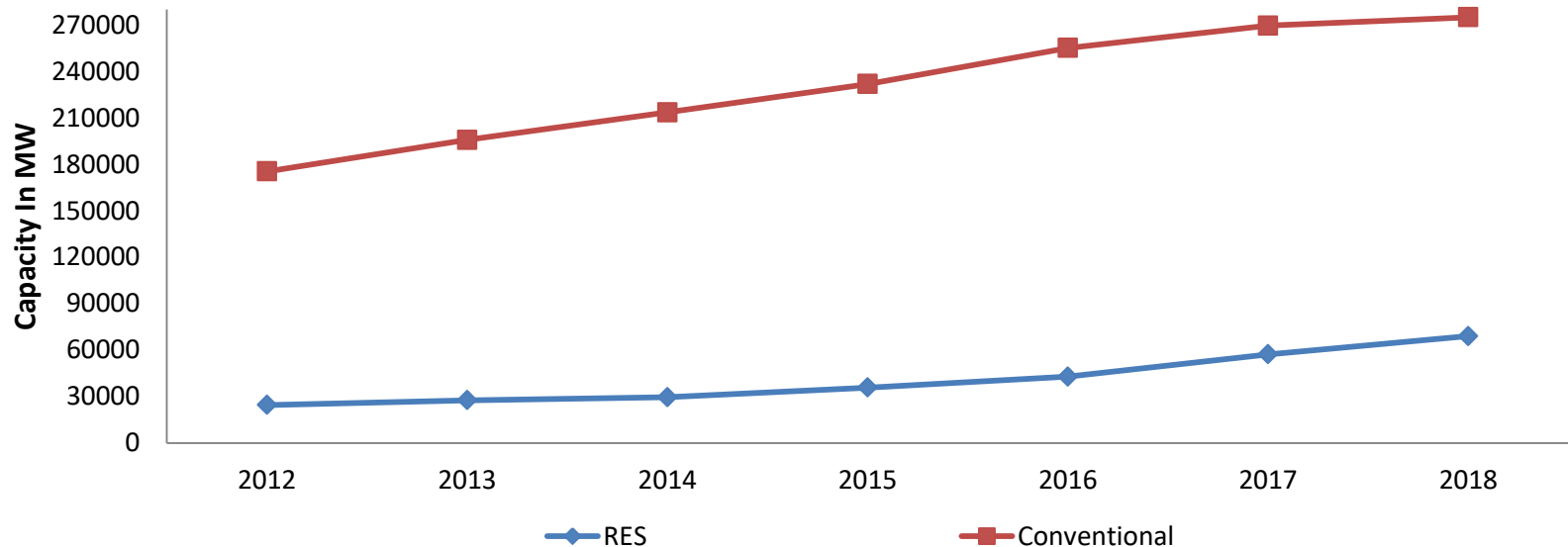
Note The data for 2016/17 is provisional

Highlights of TEDDY 2017/18

Energy

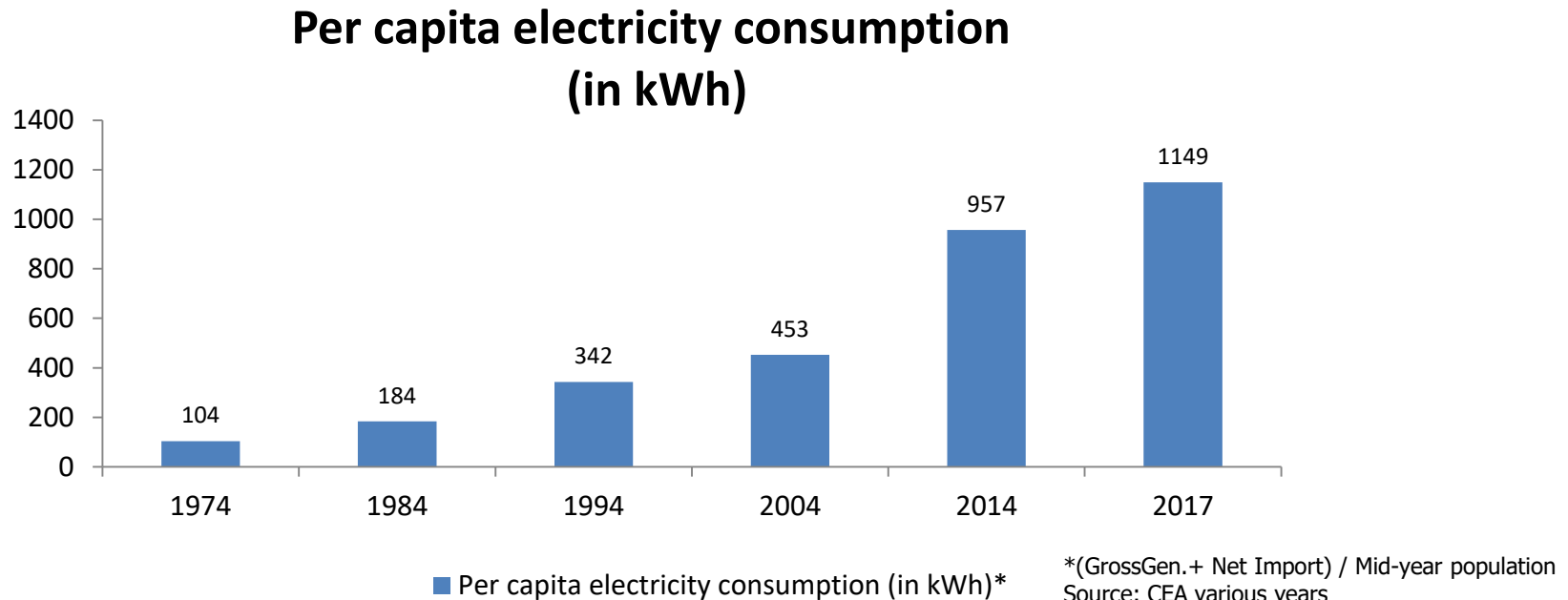
- Capacity Addition 2017 - 2018
 - Conventional sources – 5392 MW
 - Renewable sources – 11762 MW
- Percentage increase in installed capacity 2016-17
 - Conventional sources – 2%
 - Renewable Sources – 20%

Installed Capacity (MW) of Power Stations



Highlights of TEDDY 2017/18

- Per capita electricity consumption for 2017-18 – 1149 kWh



Highlights of TEDDY 2017/18

Household Energy

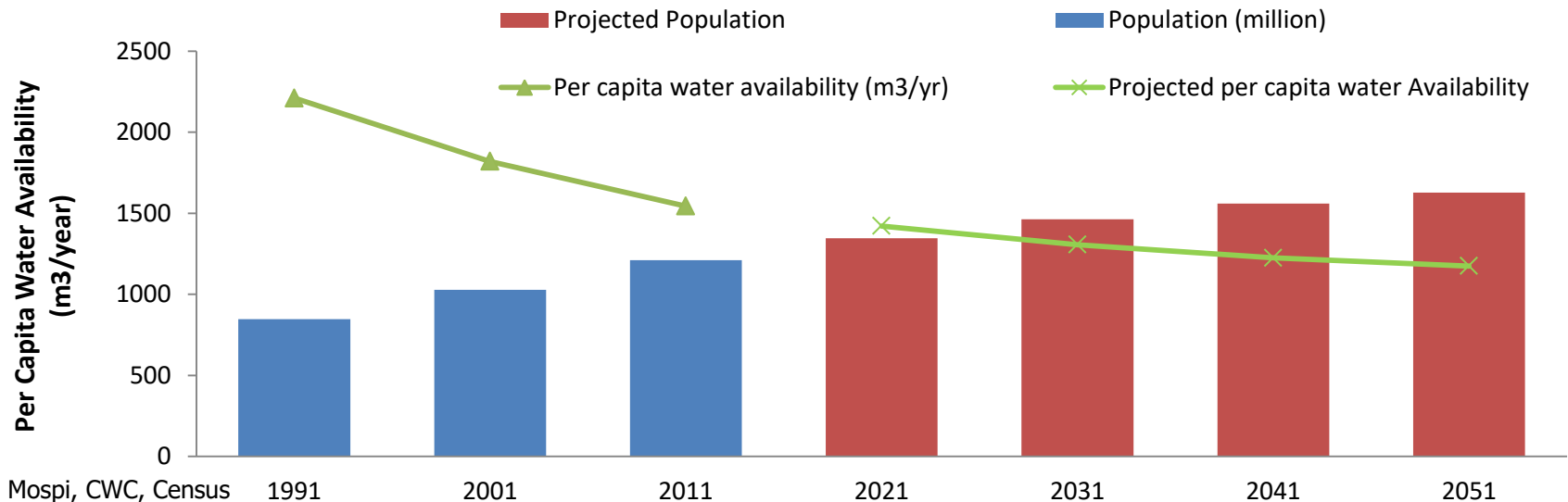
- Active LPG domestic connections (as of November 2018):
 - Total - 24.9 crore
 - Rural - 11.3 crore
 - Urban - 13.6 crore

- As of October 2018 clean fuel used by 89% households as LPG coverage increases.

Highlights of TEDDY 2017/18

Water Resources

- The average annual per capita availability of water in the country
>1951 - 5178 m³ >2011 - 1544 m³ >2051 - 1174 m³



Source: Mospi, CWC, Census

- Desalination considered a solution to increasing water shortage in the world.
- Functional desalination plants in India - 1000
- Total generating capacity - 2,91,820 m³/day
- Gujarat (47% of the total capacity) and Tamil Nadu (37% of the total capacity) comprise majority of the total desalinated water capacity in India.

Highlights of TEDDY 2017/18

Air Pollution and Quality

- 38% of NAMP sites exceeded the annual ambient concentration level ($40 \mu\text{g}/\text{m}^3$) of PM_{2.5} in 2016.
- 65% of NAMP stations are not in compliance with the National Ambient Air Quality (NAAQ) Standards ($60 \mu\text{g}/\text{m}^3$) of PM₁₀ during 2016.

Climate Change

- The year 2017 was the fourth warmest year on record since 1901.
- CO₂ emissions in India stood approximately at 2344.2 MtCO₂ in 2017

Highlights of TEDDY 2017/18

Solid Waste

- Municipal solid waste generation in India ranges from 0.17 to 0.67 kg/capita/day.

- Municipal solid waste in Urban India as of 2017
 - Generated – 49.35 MT
 - Collected – 40.53 MT
 - Treated – 9.32 MT

- Sewage Treatment Capacity of 9.19 mld has been created under National River Conservation Plan (NRCP).

- Greenhouse gas emissions from solid waste disposal (SWD)
 - 2011 - 13.75 MtCO₂e
 - 2031 - 22.77 MtCO₂e
 - 2051 - 39.71 MtCO₂e

Thank You!



For more information, visit:

<http://www.teriin.org/projects/teddy/>