



Conference on

Tamil Nadu Moving towards 24/7 Sustainable Power Supply

Chennai

6th October 2017

V. Sriram

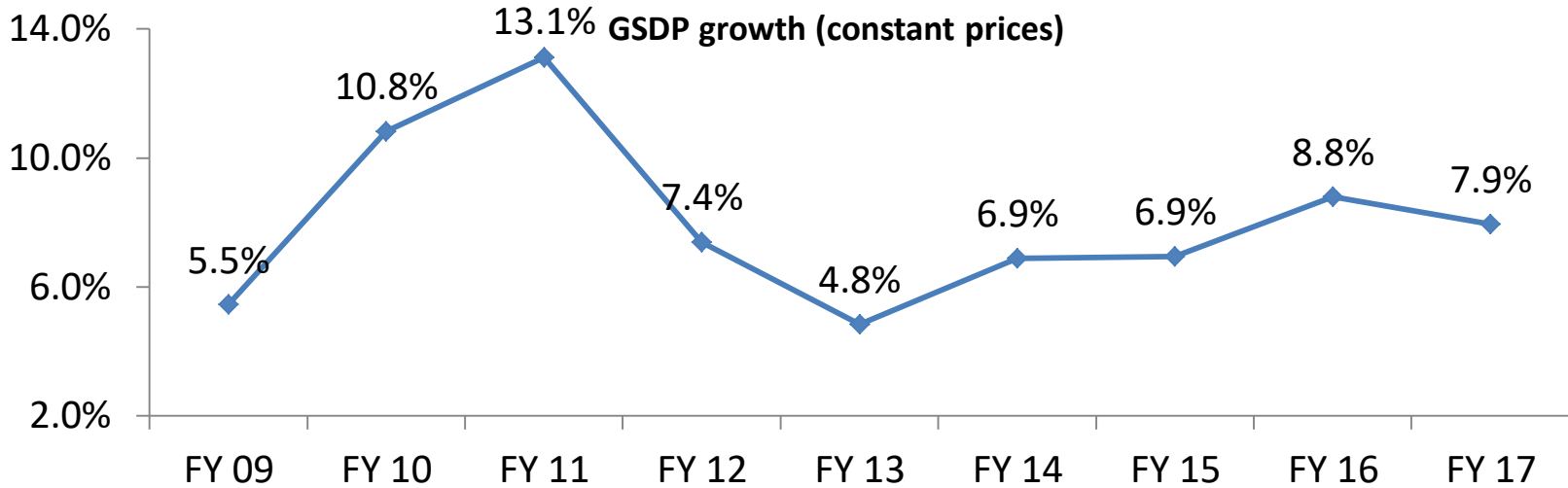
Chief Operating Officer, IMaCS



Agenda

- ❑ TN's power situation: a snapshot
- ❑ Prospects, challenges and imperatives

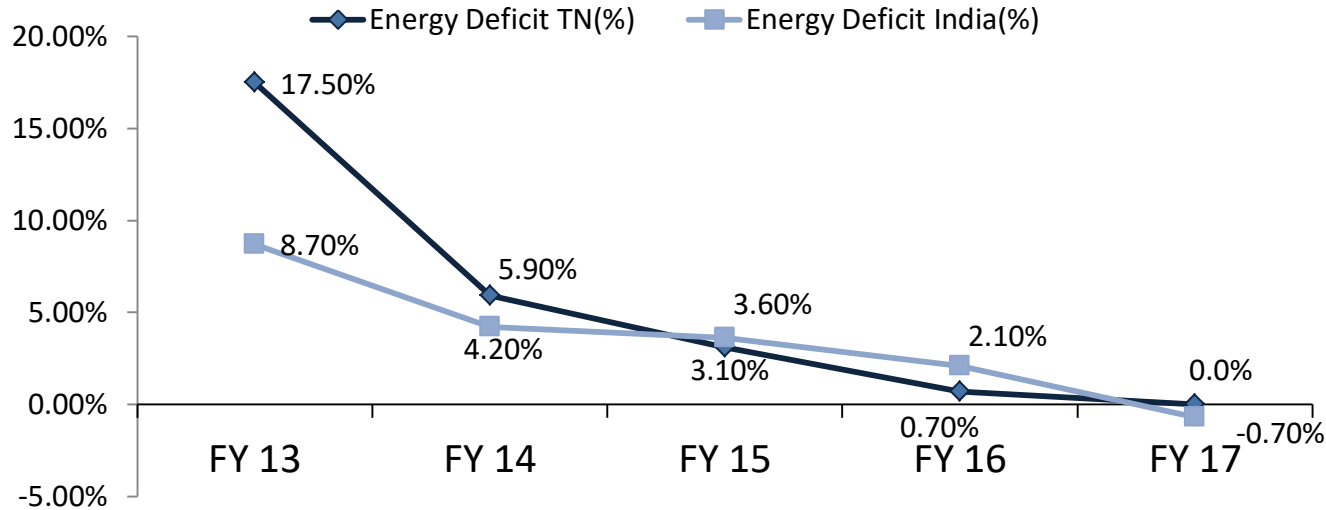
1. Tamil Nadu punches well above its size in economic terms



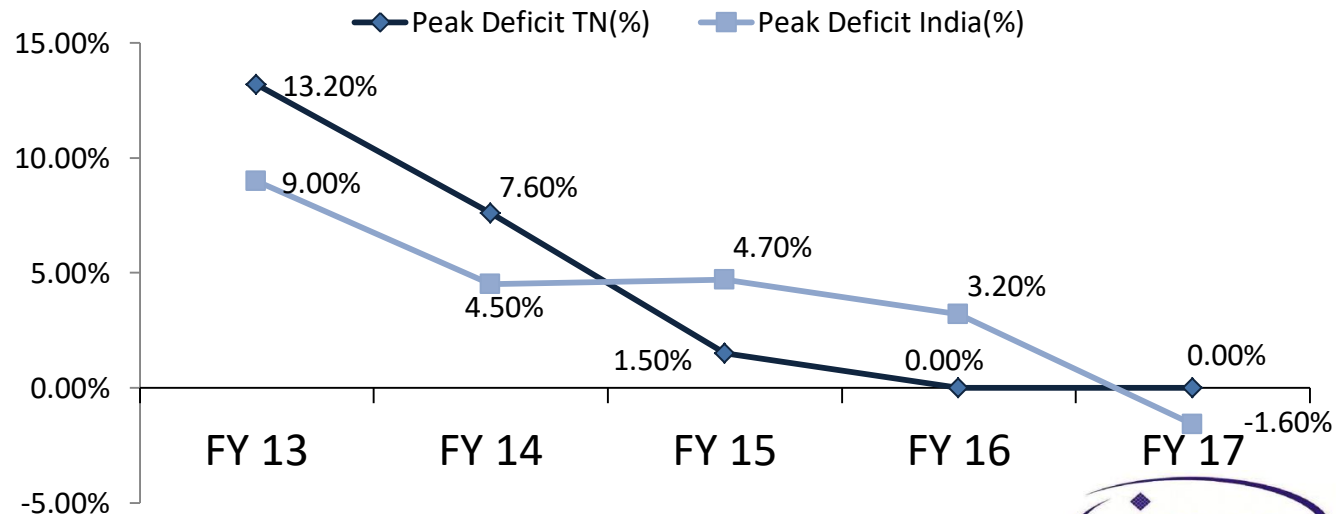
□ Scores high on urbanisation and economic output

- 11th largest State by area
- 7th largest by population
- Most urbanised state – 48.45% of the population
- 100% rural electrification achieved
- Leads in several industries including Automotive components, General engineering, Cotton spinning, Ready Made Garments, Leather processing & exports, Wind & Solar energy

2. Demand-supply gap and peak deficit have fallen sharply since FY 13



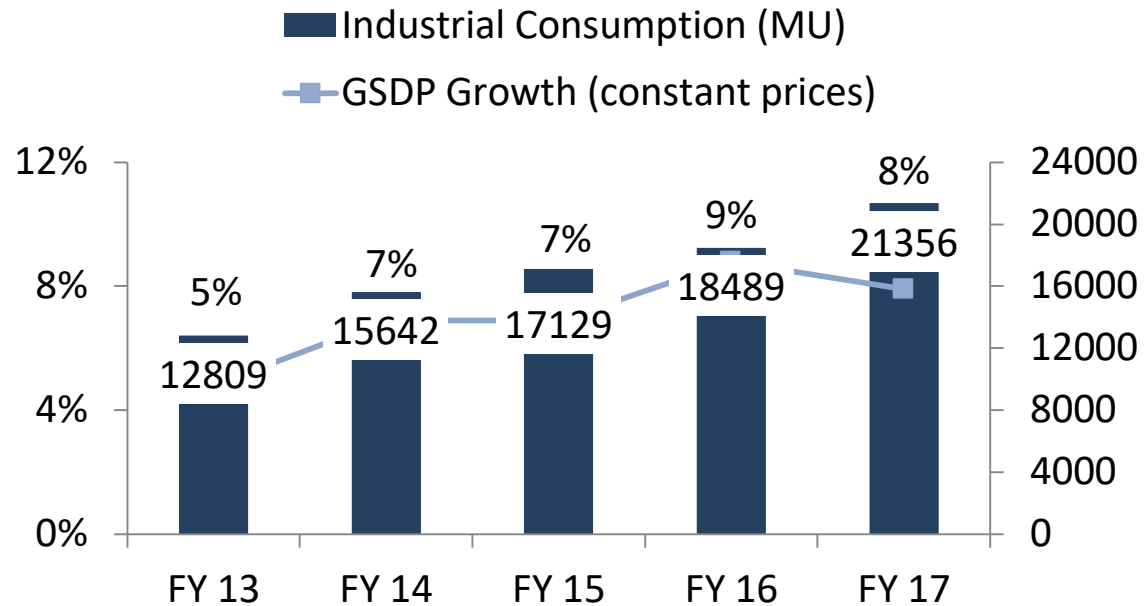
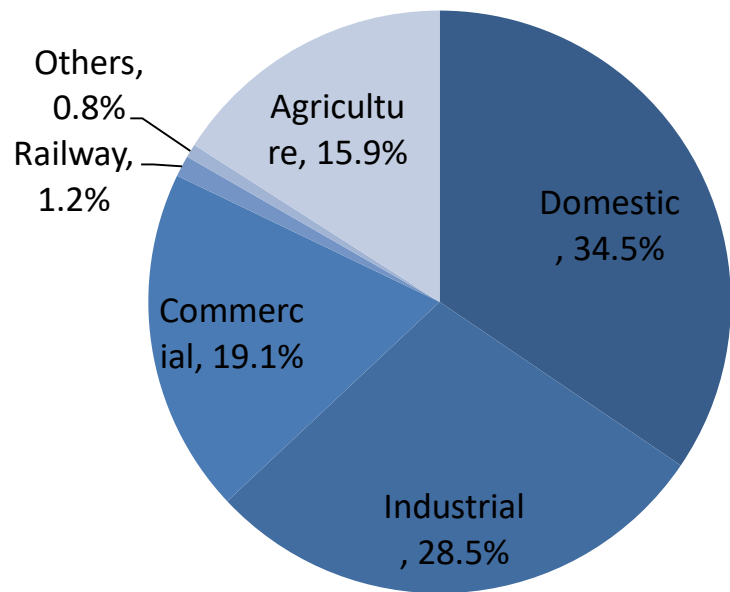
Supply has grown faster (CAGR – 8%) vis-à-vis demand (CAGR – 3%)



Sharper fall in peak deficit vis-à-vis national average. National peak deficit in FY 17 is in the negative

3. Industry ~ 28.5% of power demand; industrial power demand correlates well with GSDP growth

Sales mix FY 16



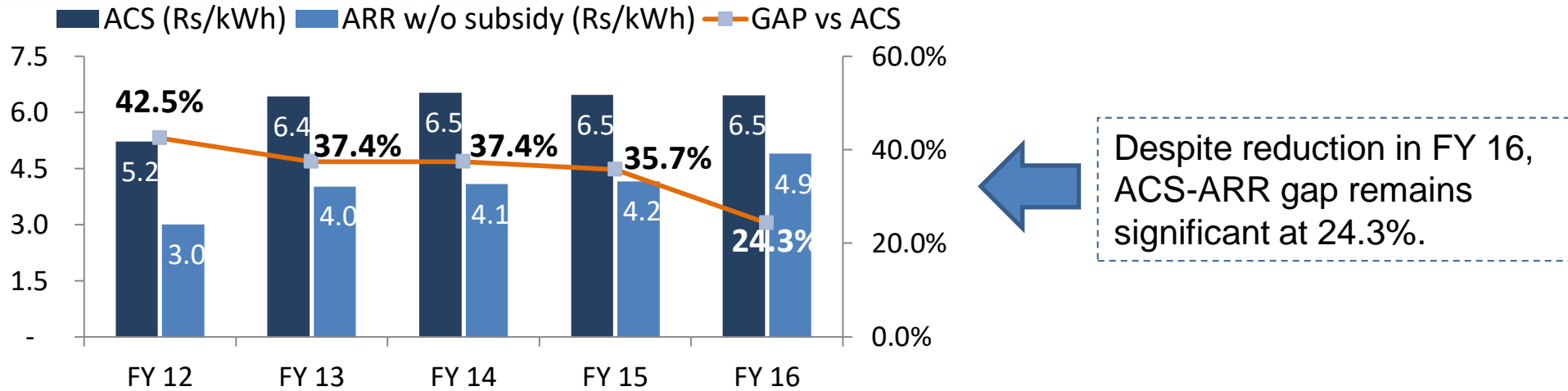
Tamil Nadu enjoys a well balanced sales mix with significant percentage of industrial demand creating scope for cross subsidising.

4. Signing of UDAY, successful renewable auctions - a positive sign for the sector

- ❑ Successful solar and wind bids have resulted in all time low tariff of Rs 3.47/ unit and Rs 3.42/unit.
- ❑ Saving to the tune of Rs 5796 crore expected from the implementation of UDAY.

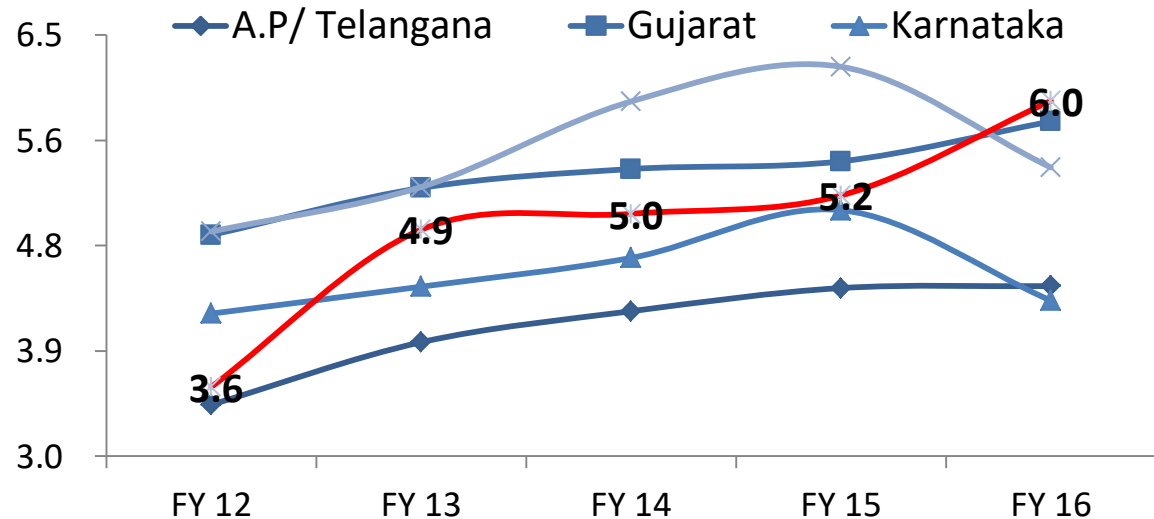
Savings in Revenue Expenditure		Cash Savings	
Particulars	Rs crore	Particulars	Rs crore
Interest savings due to takeover of loans	2882	Cash flow savings on annual	
Interest savings by conversion to bonds	200	Principal repayment	2282
Interest saving due to conversion of State loan as equity	432		
Total	3514	Total	2282

5A. TANGEDCO's stable financial health paramount for 24*7 power supply



Despite reduction in FY 16, ACS-ARR gap remains significant at 24.3%.

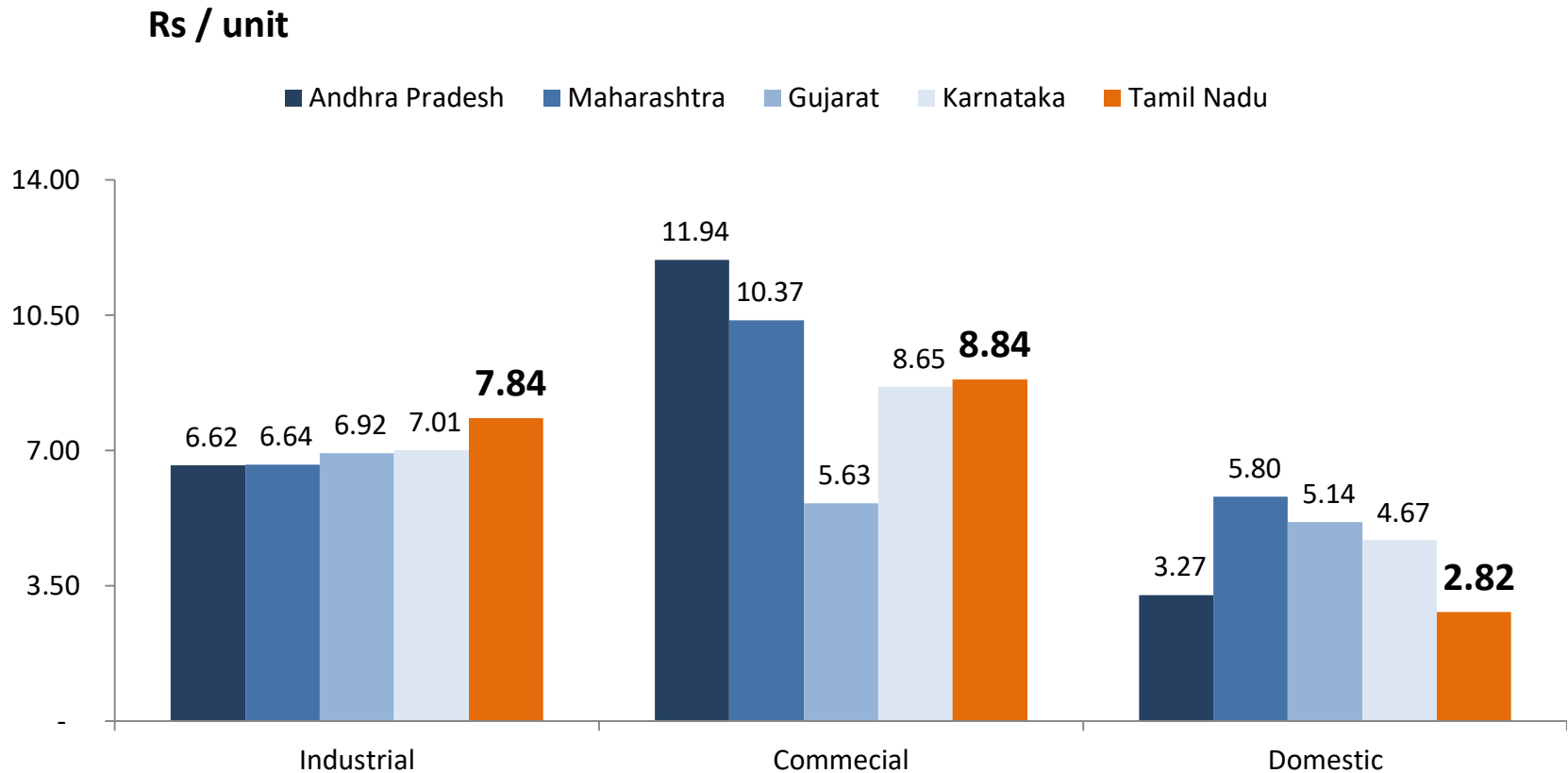
Significant increase of over 15% in ABR in FY 16. Reduction expected in FY 17 given the reduction in domestic tariff



Despite increased ABR, TANGEDCO's ACS-ARR gap continues to be high.



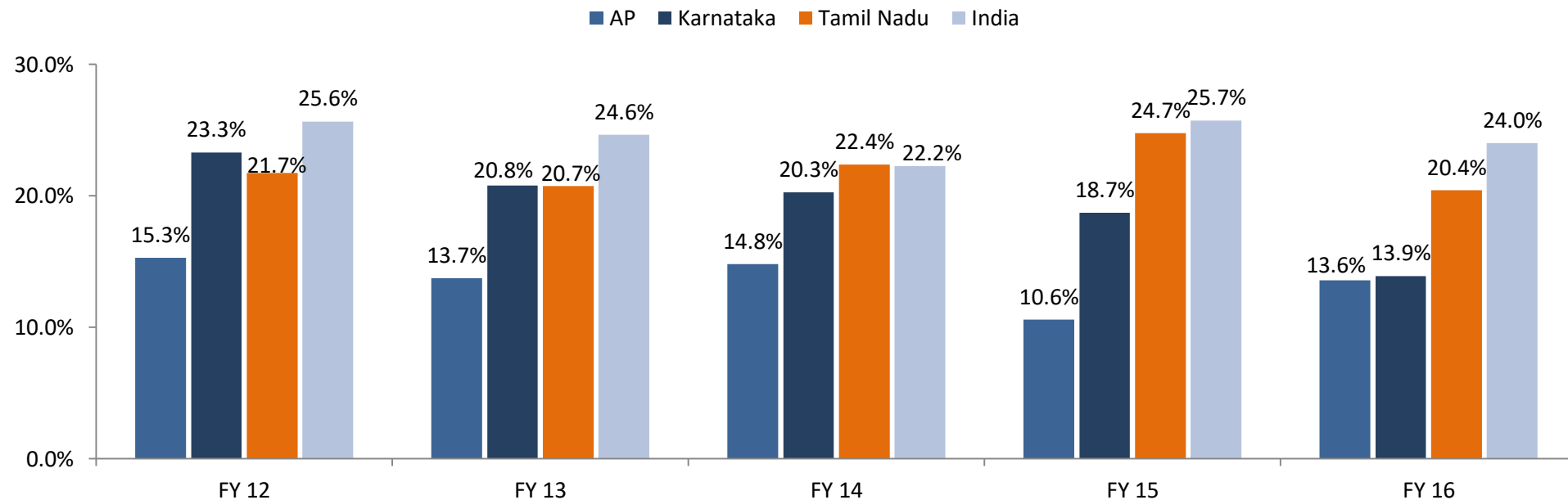
5B. Power tariffs for commercial/industrial connections high relative to most peer States



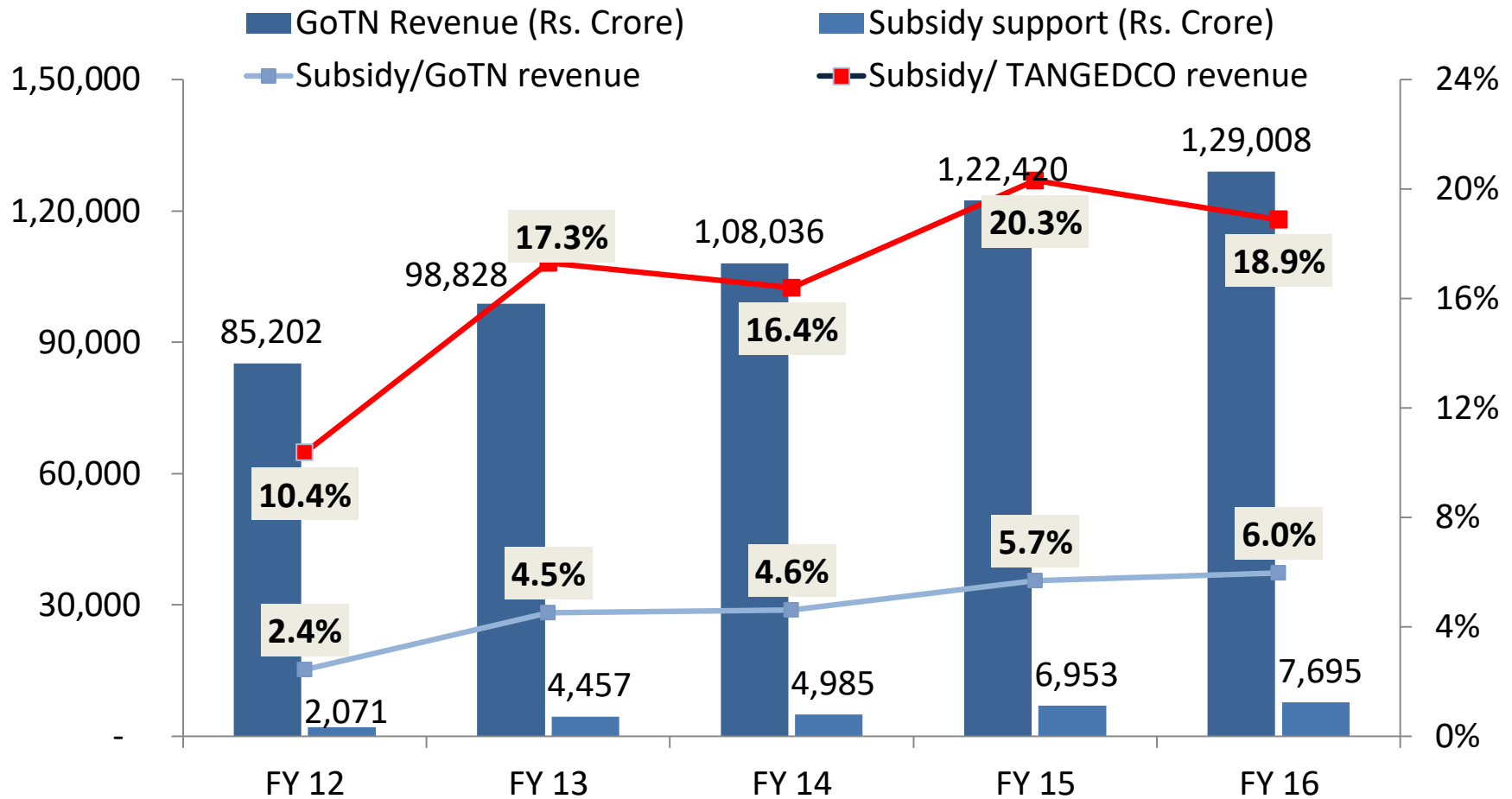
Limited room to increase industrial and commercial tariffs without denting competitiveness

5C. TANGEDCO's AT&C losses are high, though lower than national average

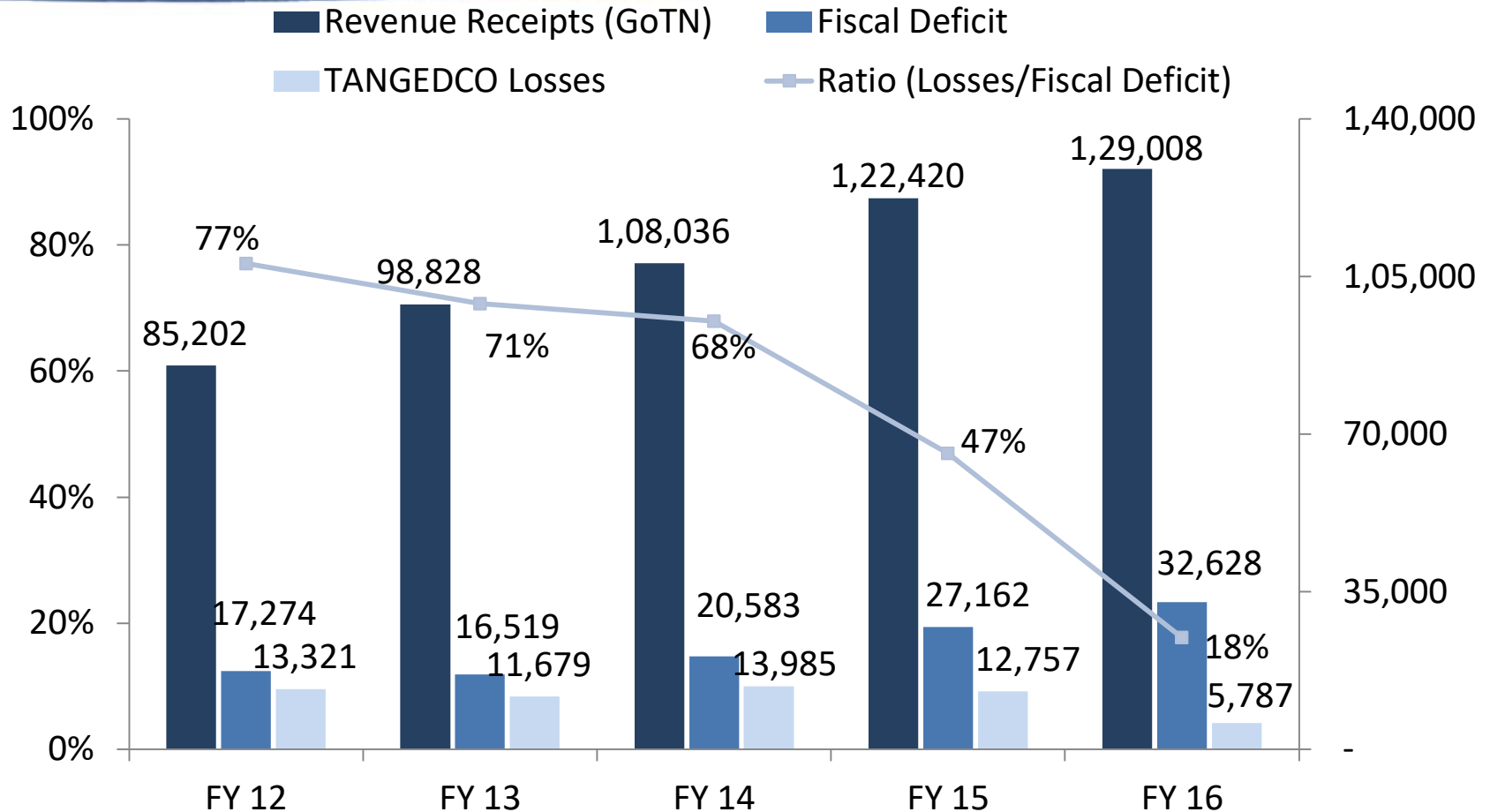
- AT&C losses have reduced marginally in 5 years.
- Significant efforts needed to meet UDAY target of 13.5% by FY 19



5D. GoTN's subsidy burden continues to remain significant



5E. TANGEDCO's weak financials - a burden on TN state financials



Steep reduction in reported losses in FY 16, losses still equivalent to nearly 18% of Fiscal deficit. **Regulatory assets in upwards of Rs 10,000 crore.**

6A. Expected incremental generation appears to be sufficient to meet expected growth in demand

- ❑ IMaCS estimates addition of 15,847 MU between FY 17 and FY 19.
- ❑ Significantly above EPS estimates of additional energy requirement of 11,582 MU.
- ❑ 4,880 MW of projects are in the pipeline for commissioning post FY 19.
- ❑ Scheduled commissioning of these projects would be sufficient to meet the additional demand till FY 23.
- ❑ Additional capacity also planned from IPPs

Particular	MU
Estimated additional requirement (19 th EPS)	11,582
IMaCS' estimated additional generation	15,847

Projects in pipeline post FY 19	MW
ETPS Expansion Project	660
Ennore SEZ Supercritical Thermal Power Project	1,320
Kundah Pumped Storage Hydro Electric Project	500
Uppur Thermal power project	1,600
NCTPP Stage III	800

6B. Scheduled completion of projects necessary to meet growing demand

- ❑ Thermal projects prone to delays
- ❑ GoTN needs to provide for necessary facilitations for the timely completion of power projects

S.N	Project Name	Developer	Capacity (MW)	Scheduled date	Actual/Anticipated
1	Neyvelli New TPP	NLC	1000	FY 16	FY 19
2	IL&FS TPP	IL&FS	1200	FY 15	FY 17
3	Tuticorin TPP	Ind-Bharat PIL	660	FY 13	FY 19
4	Mutiara TPP	Coastal Energen	1200	FY 12	FY 16
5	Ennore SEZ SCTPP	TANGEDCO	1320	FY 19	unknown

Though estimates look positive, **delayed projects may lead to deficit.**

7A. TN's ambitious renewable capacity addition plans need infrastructural and policy support

- ❑ Tamil Nadu leads in renewable energy with strong prospects
- ❑ Capacity to be enhanced by 5265 MW between FY 16 and FY 19

Source	Capacity (MW)
Wind Power	2,000
Solar	3,000
Biomass/Biogas	100
Co-generation	165
Total	5,265

- ❑ **Action points**
 - Development of adequate power evacuation infrastructure
 - Flexible generation (greater share of complementary generation such as pumped storage and gas-based plants)
 - High-end storage solutions + Upgrading grid technology, planning protocols
 - New technologies in weather estimations, forecasting and scheduling

7B. Interests of existing renewable projects should not be compromised in light of the recently discovered tariffs

- ❑ Successful solar and wind bids have discovered tariffs significantly lower than the feed-in tariffs.

Rs./kWh	Wind	Solar
Feed-in tariff	4.16	4.50
Latest bid tariff	3.42	3.47

❑ Challenges and issues

- Solar curtailment has increased significantly. Availability of cheaper short term power, a probable reason.
- Tamil Nadu has cancelled award of 500 MW solar projects that resulted from the bids conducted in January 2017 at tariff of Rs.4.40 /kWh stating high tariff.
- Wind Power Policy not in place.

Taking cues from the CERC solar TBCB guidelines, TN needs to formulate forward looking policies to adequately compensate renewable energy developers.

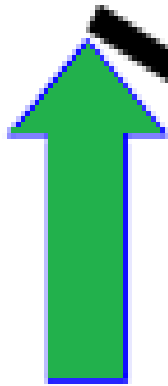
Enforceability of agreements is paramount

8. New avenues need to be explored for sustained growth in the sector

- ❑ Govt plans to make India 100% EV nation by 2030, **current market share - 0.02%**
 - ❑ Investments need to be made in developing charging infrastructure to make TN an attractive proposition for investors.
 - ❑ Developments in EV market open the market for battery manufacturing
- ❑ **Investments in EV will harness significant benefits for the power sector**
 - Better utilisation of renewable energy in the off-peak hours for charging
 - Reduction in storage requirements
 - May help reducing AT&C losses on account of more accurate billing

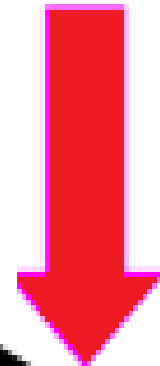
TN needs to embrace the opportunities existing in the electric vehicle market. Demand forecasting should accordingly be done.

In summary....



- Sharp reduction in power deficit
- Signing up for UDAY
- Successful renewable bids
- Capacity addition plans

- High AT&C losses
- Poor financial position
- Need for grid integration, evacuation and policy support for renewables
- Delays in project execution



Thank you



Disclaimer

All information contained in this document has been obtained by IMaCS from public sources and believed to be accurate and reliable. Although reasonable care has been taken to ensure that the information herein is true, such information is provided 'as is' without any warranty of any kind, and IMaCS in particular, makes no representation or warranty, express or implied, as to the accuracy, timeliness or completeness of any such information. All information contained herein must be construed solely as statements of opinion, and IMaCS shall not be liable for any losses incurred by users from any use of this document or its contents in any manner. Opinions expressed in this document are not the opinions of our holding company, ICRA Limited (ICRA), and should not be construed as any indication of credit rating or grading of ICRA for any instruments that have been issued or are to be issued by any entity.



For any clarifications on this presentation,
please contact:

V. Sriram

Chief Operating Officer

sriram.v@imacs.in

www.imacs.in

