

Additional Submission to Committee on Draft NEP

Prayas (Energy Group)
25th May 2021

With reference to discussions in Meeting on 15th May 2021 and
Submission dated 13th May 2021

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Clarifications and details on:

- Furthering **consumer choice** by encouraging open access, captive and grid connected RE systems
- Using **virtual net metering** to reduce bills and pending dues from public bodies
- Case for **phasing out RE concessions** → steps needed to promote RE, grid integration
- Pilots for agricultural feeder metering – **group metering** in Maharashtra

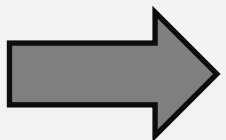
NEP Suggestion: Facilitate retail competition and consumer choice

- Carriage and content separation, multiple distribution companies – risky, complex and may not yield sufficient competition
- Focus on retail competition and consumer choice through
 - a) Open Access, b) Captive c) Behind the meter generation (net / gross, captive)

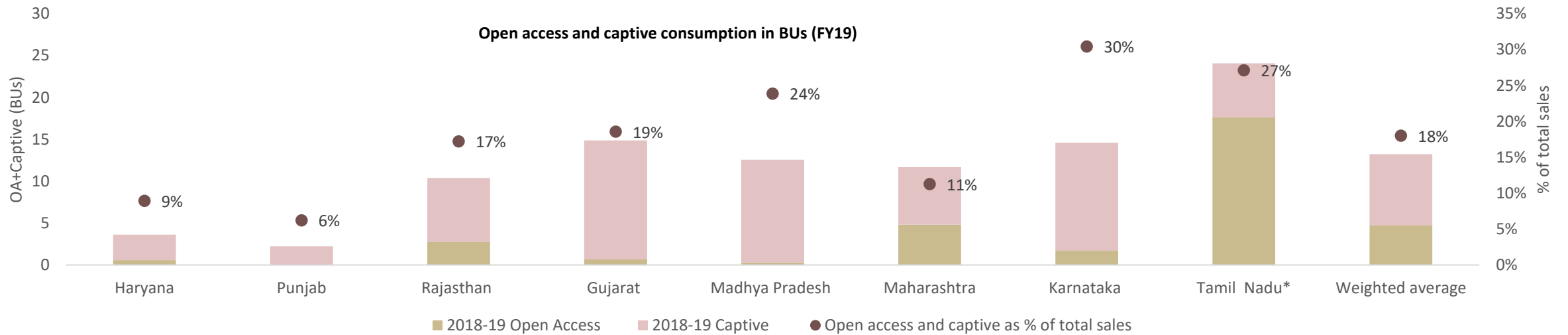
Specific suggestions

- *Lower open access eligibility to 100 kW in phase-wise manner by 2025*
- *Prescribe ceiling of ~ Rs. 2.5 / unit for Cross subsidy + additional surcharge*
- *Facilitate and liberalise captive and group captive generation*
- *Encourage electricity duty on captive (say Rs.2/ unit)*

Subsequent slides provides data and justification for suggestions



Sales migration: Trends and challenges...1



Source: PEG compilation from various tariff orders and additional surcharge petitions

*The numbers for Tamil Nadu are for the year 2019-20, as 2018-19 numbers are unavailable.

Captive and open access already substantial

- comparable to 18-20% of DISCOM sales in many states
- Migration through captive due to recent increased OA charges (>30% savings as compared to DISCOM tariffs)

Significant opportunistic switching → impacts DISCOM power procurement, finances

- > 75% of open access through short-term route (<3 months, mostly day ahead)
- Group captive, use of preferential shares allows for easy entry/exit into captive investments (used to avoid CSS)
- Consumers switch between DISCOM and the market between peak and off-peak periods

Short-term migration affects DISCOMs planning, finances and should be discouraged

Sales migration: Trends and challenges...2

Uncertainty in charges and lack of clarity, consistency in processes impedes serious investment

- Significant variation in charges esp. Additional Surcharge (sudden ↓ in savings impedes commitment to OA > 1 year)
- No Clarity on levy → AS levied on group captive, captive → ↑ litigation in some states
- No clarity on captive rules since draft amendment in 2018
- Changes in regulations, orders, rules → ad-hoc, without phase-wise implementation and adaption periods
- Industry not willing to bear risk of medium/long term investment without 5-7 year clarity in procedures

Lack of clarity and certainty contributes to high risk perception, mitigating long-term migration despite favourable prices

DISCOM not being compensated adequately

- Captive standby charge/parallel operation charge and electricity duty not revised in decades in many states
- RE banking charges not reflective of actual power procurement costs of DISCOMs
- No clear deviation and settlement mechanism for embedded captive/OA
- Framework for compensation from net metering/ BTM systems not present in most states
- Opportunistic switching costs not compensated through ↑ charges for short-term and seasonal ToD charges.

Risks of migration being borne by regulated consumers → explains DISCOMs efforts to curb migration

Sales migration: Trends and challenges...3

- **Limited choice for consumers despite savings potential due to regulatory limit**
 - 1 MW and above limit operational in 2008 → No reduction in limit in most states
 - This limits off-site captive below 1 MW due to limitation on wheeling
 - Even medium scale industries do not have access to the market options despite compelling price advantage

Promotion of consumer choice would require reduction of limit from 1 MW

- **Cost economics of RE will accelerate migration even with procedural barriers, challenges**
 - Generation cost for kW scale systems @ Rs. 5/kWh- day-time load consumer saves Rs. 2/unit (even w/o net metering)
 - Consumers will also find solar + storage options viable @ Rs. 7.6/kWh
 - Average of 70% of non-agricultural sales in 8 states pay energy charges > 5/kWh, > 13% pay > Rs. 7.6/unit
 - Even without reduction in contracted demand, consumers will find migration lucrative
 - Annual Capex of Rs. 4 crores/MW in solar PV at Rs.50-60 lakhs
 - DISCOM fixed charges higher than Rs.500/kVA this will result in reduction of contracted demand

***Significant savings on energy charges with RE.
Doubling of fixed charges will counter-intuitively accelerate sales migration.***

Consequences of such unplanned sales migration

- **Accelerated, untracked migration towards behind the meter systems**
 - Reduced dependence on DISCOMs increasingly possible even with barriers
 - Scale and speed of unplanned migration will impact DISCOMs finances, power procurement planning
- **Strain on DISCOMs to be provider of last resort without certainty in demand**
 - Planning future power procurement assuming demand → high cost surplus capacity, resource lock-ins
- **DISCOMs finances to be affected**
 - Significant and sudden loss in revenue without reduction in costs
 - Limits to increasing tariffs, subsidy in the face of rising costs

Prepare DISCOMs for inevitable transition: Provide Choice Sustainably

Provide increased options for long term migration

- Allow >100 kW consumers to avail open access to wires by FY25 /FY27, in a phase-wise manner
- SEM meter costs have reduced significantly, shift is techno-economically viable for consumers
- Provide framework for long term / group captive by amending rules (Preferential shares not counted to status)
- **Premium charges for short-term open access to prevent opportunistic switching**

Provide clarity and certainty in tariffs

- DISCOMs supplies power at **negotiated, not regulated tariffs** for such consumers (not less than cost of supply)
- **CSS, AS fixed for a five year period** to encourage long term migration, provide signals for DISCOM efficiency
- **Compensatory charge to be levied on captive** at say Rs. 1.5/unit (for RE and non-RE)

Provide Certainty in Power Procurement

- DISCOMs demand forecasting, base-load power procurement **restricted to consumers <100 kW**
- Existing contracted capacity and bilateral trades adequate to **meet demand without capacity addition**
- Such measures can reduce cost of supply in 5 to 10 years

DISCOM to charge for services provided at cost

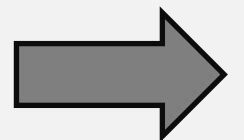
- Banking -move away from ad-hoc ~2-5% of the energy in kind to 15-minute block-wise valuation of service
- **Standby services, provider of last resort at regulated based on cost of service**
- ToD tariffs for 10 kW and above with seasonal change in tariffs, demand response

NEP Suggestion: Virtual Net Metering for Public Bodies

- Dues from government and public service consumers → contributes to reducing collection efficiency.
- To address this problem, virtual net metering can be allowed for such 'public consumers'.
- SNA/Genco to install a large, say 100 MW solar plant as a captive plant for all 'government / public service consumers'
- State pays for the power procurement and eligible consumers are given credit for such virtual net metering plant.
- The mechanism can provide power to these consumers at a fixed rate and also help meet the DISCOMs RPO
- ***Aim can be to bring at least 75% of such public use under virtual net metering***

- **Suggested Para 5.28 can be added to the NEP:**
- *The Central and State Governments, State Commissions and DISCOMs, should evolve 'virtual, group net metering' mechanism for supply to 'public service' consumers such as government offices, public water works, government schools, gram-panchayat connections, street lights etc. Such projects could be set up with government support, and will help address the issue of providing adequate and affordable power to public service consumers. Under this mechanism government entities will be responsible for directly paying to RE developers based on PPA tariff. This will help address issue of arrears from government consumers for DISCOM.*

Subsequent slides provides details for suggested scheme



Power supply to public bodies: The challenge (1/2)

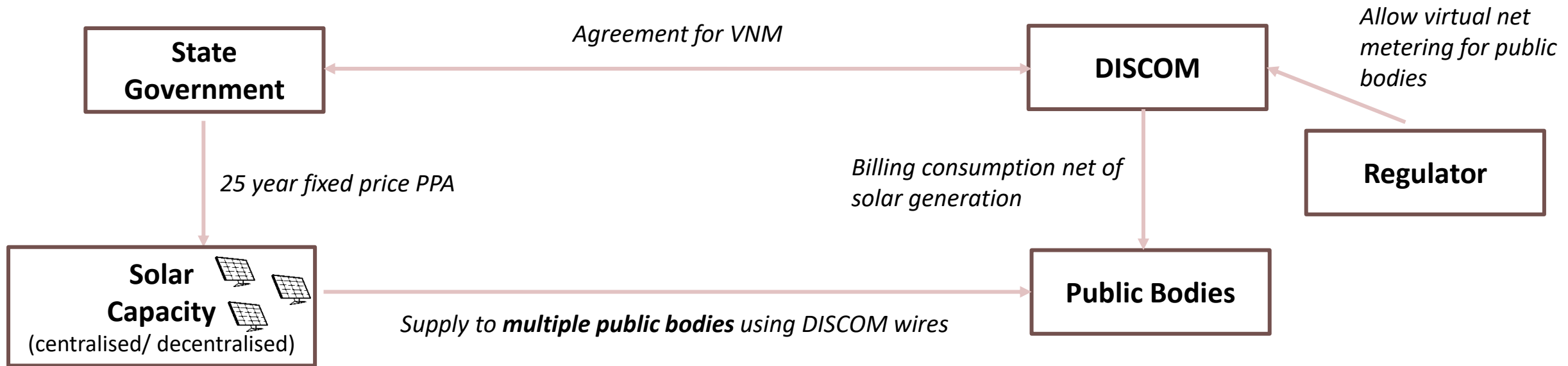
Public bodies unable to clear dues due to delay in government disbursements

- Includes essential services: hospitals, schools, police stations, streetlights, water works, offices etc.
- Trade receivables (mostly dues from consumers) @ **Rs.1.82 lakh crores in FY19**
- Contribution of public bodies to arrears as per DISCOM records substantial
 - 50 % in UP (FY19)
 - 18% in Rajasthan (FY20),
 - 11% for MSEDCL in Maharashtra (FY20)
 - 75% in AP (FY20)

Existing solutions do not address challenge

Potential strategies	Why this alone may not be effective for public bodies
Nudge Govt to clear dues	→ Significant existing fiscal pressure which will increase with COVID-19
Disconnections in case of non-payment	→ Reduces access for an essential public service, reduces public welfare
Pre-paid metering	→ Denial of service due to delays. Efficacy depends on govt. payment discipline
DBT for bill payments for public services	→ DISCOMs working capital affected with delayed payment.

The solution: Virtual Net Metering (VNM)



VNM: Energy injected from dedicated RE capacity can be adjusted with consumption of public bodies in DISCOM area

Procurement:

- EDA/ State Government procures 100 to 500 MW through PPA/ PPAs with solar developers
- VNM Agreement with DISCOM specifying installed capacity, CUF, share of each public body (based on sales/ contracted demand)

Adjustment of energy:

- Energy generated from capacity, adjusted in bill based on agreement.

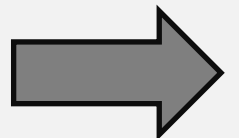
One-time grant can result in fixed price power procurement & reduction in cost of supply, bills, arrears

NEP Suggestion: Moving from RE concessions to valuing services at cost

Suggested change in Para 5.24 (underlined)

'...Further, the rapid pace of RE development and falling RE tariffs indicate potential for market-based mechanisms. Market-based options need to be explored, which can help to strike a desired balance between capping investor's price risk while ensuring some exposure to basic market risks of forecasting, scheduling and balancing. Considering falling RE tariff and likely increase in RE capacity, it is necessary to move away from incentives and concessions based approach for RE development in the near future, say two to three years. Simultaneously, it is necessary to appropriately value and provide various grid services, such as banking, grid connectivity, transmission services required for effective deployment of RE capacity. This would be a balanced approach rather than providing concessions on one hand and denying grid services on the other.'

Subsequent slides provides details for suggested scheme



RE concessions: Time to allow RE to thrive on its economic proposition (1/2)

The rationale for concessions

- RE needs to be promoted → support required beyond RPOs given multiple benefits
- Need to ensure economic parity for new and evolving technology

With falling prices, does the rationale for hold true?

- New wind, solar → 25-year fixed tariff of Rs 2.5-2.75/kWh
- Cost competitive in terms of VC, with new thermal
- Mh, Guj, Raj, Chattisgarh: Withdrew CSS concession for solar

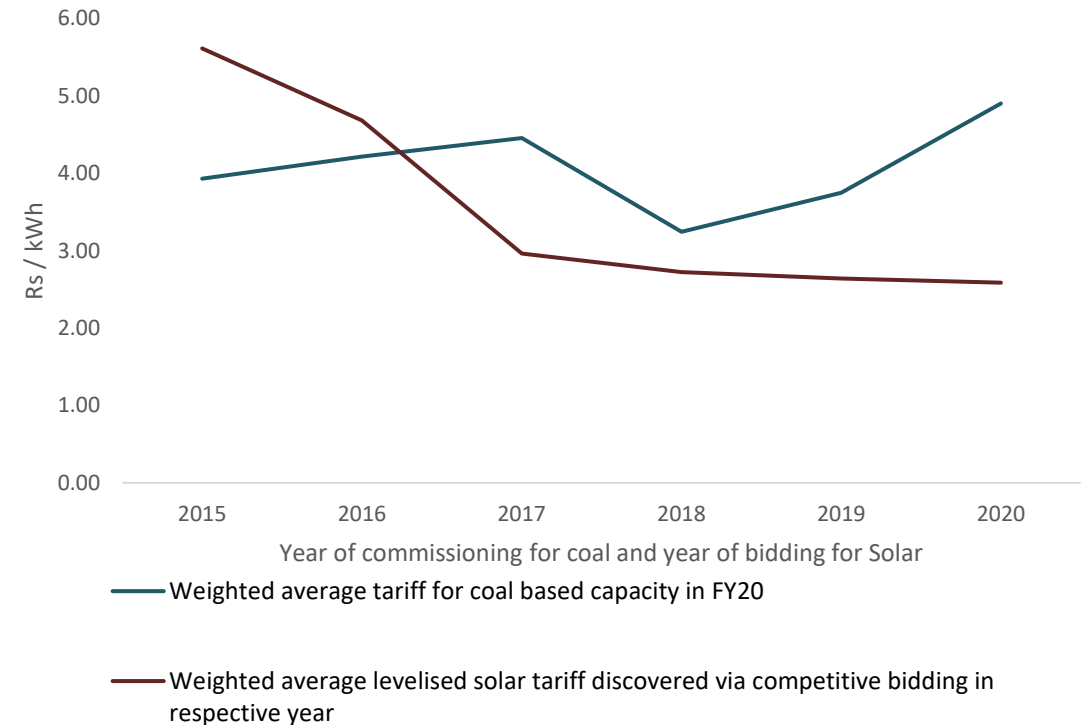
ISTS concessions send wrong market signals

- Smaller projects connect to ISTS irrespective of location, voltage
- Increased queuing up of projects, burden on network

Need to phase out concessions for new projects

- Projects which have come based on concessions to avail as per policy
- Concessions not required for new projects
- Projects currently under construction can avail policy benefit

Variable charge for recently commissioned coal power plants as on 9th August 2020 compared to average levelized solar tariffs discovered in the year of commissioning



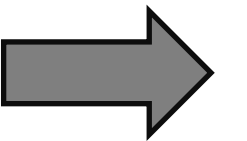
Source: Prayas analysis based on MERIT database, CEA documents, regulatory orders, Lok Sabha Q&A, MNRE Demand for Grants, SECI results and various newspaper articles

Facilitative, investment friendly environment more crucial than concessions (2/2)

- **Focus on RPO targets and compliance**
 - States to be incentivised to revise RPO targets and for compliance
 - Nudge levy of penalties for non-compliance
 - Merge solar and non-solar RPO to provide flexibility to states
- **Provision of services at cost rather than restricting services**
 - **Banking**- move from ad-hoc rate of ~2-5% of the energy in kind to 15-minute block-wise valuation of service
 - **Net/gross metering/billing**- operationalise risk and reward sharing frameworks which values banking, reliability etc.
- **Reduce risk incurred by DISCOMs**
 - ToD tariffs based on solar hours and seasonal variation in load
 - Revision and tightening error bands in F&S regulations based on operational experience and pass back the entire cost of deviation settlement back to the RE generators through amendments in F&S regulations.

NEP Suggestion: Encourage pilots for agricultural group metering

Subsequent slides provides details for suggested scheme



Agri feeder metering pilots: Maharashtra's group metering scheme

The scheme as approved by MERC in 2020

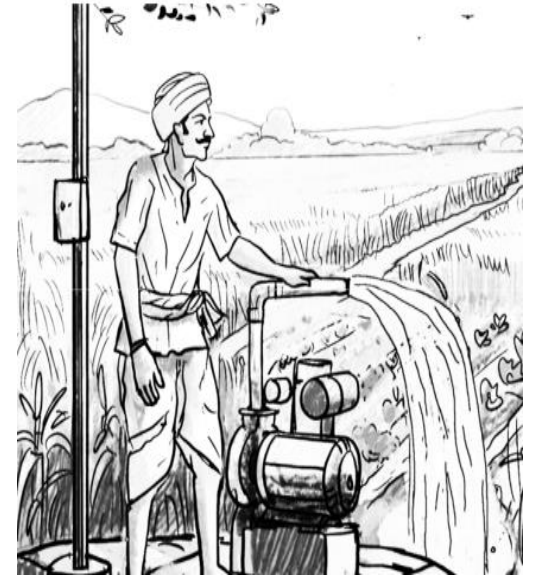
- Bills to be issued to consumers based on 11/22kV feeder metering information
- Feeder input energy (minus) Technical losses on feeder = Energy billed for Feeder
- Feeder to be shared on a pro-rata basis with consumers proportional to farmer's sanctioned load
- Sanctioned load can be verified and reassessed every five years
- Energy billed subject to ceiling of 3000 hours/HP/annum
- Excess or short-fall in billing adjusted on pro-rata basis every billing cycle

Potential benefit

- Bypasses ground-level challenges with metering and billing of individual pumpsets
- Can fit in with other pipeline schemes such as solar feeder approach, DBT, incentives for water saving etc.
- Will ensure accountability for feeder level metering by DISCOMs by farmer groups

Why pilots?

- To address potential issues with consumer heterogeneity, consumer indexing, variation in use and sanctioned load etc.
- With time, scheme can be scaled up and based on results can be extended to DTs with AMI metering.



More details in MERC Order in Case No. 322 of 2019

THANK YOU

PRAYAS (ENERGY GROUP)

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