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Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS)

Concept Stage | Date Prepared/Updated: 23-Mar-2017 | Report No: PIDISDSC20928



BASIC INFORMATION

A. Basic Project Data

Country India	Project ID P162086	Parent Project ID (if any)	Project Name Jharkhand Power System Improvement Project (P162086)
Region SOUTH ASIA	Estimated Appraisal Date Nov 20, 2017	Estimated Board Date Feb 20, 2018	Practice Area (Lead) Energy & Extractives
Lending Instrument Investment Project Financing	Borrower(s) Republic of India	Implementing Agency Jharkhand Urja Sancharan Nigam Ltd.,Jharkhand Bijli Vitran Nigam Ltd.	

Proposed Development Objective(s)

The project development objective (PDO) is to increase the delivery of electricity at the boundaries of the power distribution network in the State of Jharkhand and operational efficiency improvement of power distribution utility of the state

Financing (in USD Million)

Financing Source	Amount
Borrower	175.00
International Bank for Reconstruction and Development	150.00
Total Project Cost	475.00

Environmental Assessment Category

B-Partial Assessment

Concept Review Decision

Track II-The review did authorize the preparation to continue

Note to Task Teams: End of system generated content, document is editable from here.

Other Decision (as needed)



B. Introduction and Context

Country Context

1. As noted in the Country Partnership Strategy¹ (CPS) for India for FY2013–2017, India's economic and human development is one of the most significant global achievements of recent times. Growth has steadily accelerated over time, showing resilience even in the aftermath of the global financial crisis. Lifted by lower oil prices and more recently by a normalization of agricultural output, India has become the world's fastest growing large economy and also the world's 3rd largest economy by Gross Domestic Product (GDP) in Purchasing Power Parity (PPP) terms accounting for around 17 percent of the world's population. Growth in real GDP (market prices) increased from 5.1 percent in FY13 to 7.6 percent in FY16.

However, this rapid economic growth and positive human development has not been widely shared as the 2. Indian society remains highly segmented and income inequality is rising with some states performing better than others. Jharkhand, located in the eastern part of the country and carved out of erstwhile Bihar in the Year 2000, is the 14th most populous state in India and home to 33 million people. It lags behind the rest of the country on most human and social indicators. More than 75 percent of the state population lives in rural areas (2011 Census). The state had Net State Domestic Product (NSDP) of INR 59,114 per capita compared to an All India figure of 93,231² in FY2016. Poverty (at 37 percent) is among the highest in the country today³ and the share of workers with salaried jobs is the lowest in the country⁴. Health and education outcomes in Jharkhand have been improving, but progress is slow. However, in the last few years the state has embarked on a number of initiatives to place itself on a path of economic growth and the state's economic growth has outpaced the country as a whole in recent years; the state's GDP grew at rate of 8.4 percent between FY2012 and FY2016 compared with an average national growth rate of 6.8 percent. During FY2015-16, the state of Jharkhand was ranked third in 'ease of doing business', next only to Gujarat and Andhra Pradesh. Despite the strides in economic growth and being resource rich in minerals⁵, the state has not been able to harness its full potential. It also severely lacks in infrastructure that constraints the state's ability to provide reliable basic services to its citizens and provide an impetus to growth. Recognizing this challenge, the state in now focusing on developing infrastructure in the state particularly in roads, energy, education, industrial infrastructure and health sectors⁶.

Sectoral and Institutional Context

4. Despite adequate power generation, and one of the best managed national transmission systems in the World, 300 million people in India are still without access to electricity, and many who can legally connect to the electricity grid choose not to, because electricity supply is unreliable in their areas. This contrasts with the overall picture of a peak deficit of only 1.6 percent in India during December 2016 and the country is on its way to reducing this to zero and becoming surplus by FY17 end. Thus, this lack of reliability is not an issue of availability of power generation. Similarly, the national transmission grid has robust capacity handling around 165 GW of peak demand and is unified with a single frequency of 50 Hz. While the generation and inter-state transmission sectors are managed by well governed central institutions, the situation at the state level is different. The intra-state transmission and

¹ Report No. 76176-IN, Country Partnership Strategy for India for the Period FY2013–17, March 21, 2013.

² GDP per capita as per Economic Survey of India, 2015-16

³ http://documents.worldbank.org/curated/en/767291467992476557/pdf/105854-BRI-P157572-PUBLIC-Jharkhand-Proverty.pdf

⁴ http://documents.worldbank.org/curated/en/802071467996678510/pdf/105855-BRI-P157572-PUBLIC-Jharkhand-Jobs.pdf

⁵ Jharkhand has 40% mineral wealth of the entire country but accounts for only 10% of the national production ⁶ FICCI report <u>http://ficci.in/state/1012/Project_docs/JHARKHAND.pdf</u> and Jharkhand Investor Summit 2016-17 http://momentumjharkhand.com/focus-sectors/



distribution (T&D) networks that are managed by state run utilities are at different stages of development across states. While some states have developed and well managed T&D networks, there are others where the network is inadequate and as expected, these states also have low access levels, comprising mostly rural consumers and the urban poor. Some of those who do have a connection to the electricity grid, face intermittent power supply. In such states, industry and commercial enterprises also suffer due to unreliable supply, and are forced to invest in expensive and polluting diesel-fueled back-up generation. At the intra-state transmission level, the issue is of inadequate investments and/ or poor maintenance of assets. At the distribution level, the issues lie with heavily-indebted loss-making state Distribution Companies or Discoms, which are for the most part publicly owned, and whose limited resources leave them incapable of providing reliable electricity supply. The poor performance can be attributed to a combination of factors - network constraints, weak governance, low regulatory support (often resulting in below-cost-recovery tariffs), and high aggregate technical and commercial (AT&C) losses. The potential for development can be adjudged by the fact that the average per capita consumption of electricity in India is only one third of the global average

5. Enacting improvements in the provision of electricity services is particularly challenging since electricity is a "concurrent" subject under the Indian Constitution. The central government establishes the national legal framework and sets policies. Further, Central government-owned corporations play an important role in power generation and transmission, for the purposes of inter-state supply while state governments are responsible for electricity transmission and distribution within their territories. Going forward, the power sector will need to develop in a way that is consistent with the demands placed on it by the country's growth trajectory, urbanization patterns over time, and consumer aspirations. In the next two decades, India will face challenges if it is to sustain 8–10 percent economic growth required to end poverty, achieve human development goals and universal access. Well governed state institutions will go a long way in meeting these challenges and there is an urgent need to replicate the strong institutional structure of central power sector undertakings at the state level.

6. In 2014, Gol announced an ambitious 24 x 7 Power for All (PFA) program, involving a partnership with States, to ensure reliable electricity supply within the next five years. This initiative aims at providing uninterrupted supply of quality power to existing consumers and ensuring access to electricity to all unconnected consumers in the next five years, i.e. by 2019. Under the '24x7 Power for All' initiative, the States/Union Territories in the country have prepared state specific plans jointly with Gol and these are under implementation. The PFA roadmap document includes an assessment of (a) energy required to provide '24x7 Power for All' for connected and unconnected consumers, (b) adequacy of power supply to the State from various generating sources, of the inter and intra-state transmission systems, and the distribution infrastructure, to ensure 24x7 power supply to all consumers. While supporting the development of electricity transmission and distribution infrastructure in states, the Gol in 2015 also announced a program for financial and operational turnaround of the Distribution Utilities- Ujjwal DISCOM Assurance Yojna (UDAY), which seeks to restructure distribution companies' debt, requiring State governments to take responsibility for part of this debt, in return for improvements in service delivery and commercial performance by the distribution companies.

7. Though delayed in comparison with other states, the state of Jharkhand has pursued significant reforms in the power sector in recent years: In January 2014, the vertically integrated Jharkhand State Electricity Board (JSEB) was unbundled into four independent companies - Jharkhand Urja Vikas Nigam Limited (JUVNL or the Holding Company); Jharkhand Urja Utpadan Nigam Limited (JUUNL or the Generation Company); Jharkhand Urja Sancharan Nigam Limited (JUSNL or the Transmission Company and State Load Dispatch Center) and Jharkhand Bijli Vitaran Nigam Limited (JBVNL or the Distribution Company). The four successor companies of JSEB share space in Jharkhand with five other utilities - Damodar Valley Corporation (DVC, which has presence across Generation, Transmission and Distribution segments but distributes electricity only to industrial customers in about eight districts of Jharkhand), Jamshedpur Utility Service Company (JUSCO, a private distribution licensee which operates in the town of Jamshedpur and the surrounding



industrial areas), Tata Steel and SAIL (both of which serve consumers within the perimeters of their steel factories). JBVNL accounted for 46 percent of the electricity distributed in the state of Jharkhand in FY2015 followed by DVC (34 percent), Tata Steel (17 percent), JUSCO (2 percent) and SAIL (1 percent). However, in terms of geographical area, the state owned Discom, JBVNL, has the largest mandate of distributing electricity to all twenty four districts in the state.

8. Due to delayed reforms, the development of transmission and distribution infrastructure and the consequently the performance of power sector in Jharkhand, has lagged behind those of other states in India. The state's power sector faces challenges on multiple fronts, some of which are:

i. Large un-electrified population and high peak energy deficit. Jharkhand has the lowest levels of rural electrification, as only 44.7 percent of the rural households have been electrified. As per the state PFA plan, more than 3 million households or close to half the state's population were without access to electricity in FY2015. The economic survey for 2015-16 for Jharkhand states that the state faced an energy deficit of 6 percent and a peak deficit of 14.6 percent during FY15. The per capita consumption of electricity in Jharkhand at 552 kWh is roughly half of the national average of 1010 kWh.

ii. **Inadequate transmission and distribution infrastructure:** Due to the poor financial performance of the utilities, there has been an under-investment in the transmission and distribution infrastructure of the state resulting in a significant supply constraint. The growing power demand has already exposed bottlenecks in the transmission and distribution network in the state, which are expected to worsen with growth in electricity access if the network is not augmented and strengthened.

iii. **Poor operational and financial performance of the distribution sector:** Despite improvements over the last few years, the state distribution utility faces significant challenges on operational and financial performance as indicated by the high level of aggregate technical and commercial (AT&C) losses at 36 percent and below cost retail tariffs. This has had an adverse impact on the financial health of JBVNL which in turn has constrained investment in the distribution segment and this gap is expected to increase due to the rapid growth of loss making domestic consumers and the high regulatory disallowances by the independent regulator in tariff orders.

iv. **Low institutional capacity of the unbundled power sector entities:** Through a state level multi-sectoral NLTA, concluded in June 2015, the Bank had undertaken a diagnostic exercise of the newly unbundled power sector entities and the study highlighted the limited institutional capacity in a range of areas including capital project planning and implementation, use of information technology for commercial operations such as metering, billing and accounting, human resource management, procurement, financial management, operations and maintenance and weak corporate governance practices.

9. The state government's commitment to improving the availability and quality of power supply to support the state's economic development can be perceived from the following actions:

i. **Decision to implement the 24x7 PFA roadmap for the State:** Jharkhand was one of the first states to sign the Memorandum of Understanding (MoU) for 24x7 PFA plan with the central government. Under this plan, the state intends to add around 6 GW of generation capacity by 2022⁷, through a mix of private and public sector investments. There is also a strong focus on renewable energy in the generation expansion plan, with about 1.5 GW of the increase expected to come from solar energy. The state has been sanctioned funds under the two centrally sponsored schemes – Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and Integrated Power Development Scheme (IPDS), to carry out distribution strengthening in rural and urban areas, and thus achieving 100 percent household electrification.

ii. Signing up to UDAY to Improve operational and financial performance of distribution utility: Recognizing that

⁷ Not all power will be used within Jharkhand



a healthy distribution sector is vital for the success of the power sector, Jharkhand was the first state to join the UDAY program of GoI in January 2016, under which the State has agreed to take over a substantial portion of the debt of the Discom, and would provide support for infusing operational efficiency in the Discom. The Discom is expected to undertake specified measures for loss reduction (metering, energy audit, improvement in billing and collections efficiency etc.).

iii. **Augmentation of transmission networks to carry power to all parts of the state:** The peak load that was met in the state of Jharkhand in FY15 was 3,255 MW, of which about 1,810 MW is served by JBVNL. According to the PFA document, the peak demand in JBVNL area is expected to double and increase to 3,778 MW by FY19 to accommodate the increase in access levels and hours of supply. This would translate into a peak demand of 5,700 MW for the state as a whole (after including demand served by other licensees). To meet the expected growth in demand, the state needs an investment of close to INR 90 billion over the next five to six years to strengthen and augment the transmission network. The state aims to meet this need through a combination of resources – state funds, commercial and multilateral borrowings, and private funds mobilized through Public Private Partnership (PPP)⁸ mode. The transmission company also needs significant support towards capacity building to implement this ambitious capital plan as well as gear itself up to dispatch large solar power planned in the state.

10. Considering the current challenges and investment needs in the sector, and to leverage World Bank's long experience in India's transmission sector through the series of loans to POWERGRID, the Government of Jharkhand (GoJ) has requested the World Bank's support in implementing a set of priority investments in transmission sector and support institution development of the transmission and distribution utilities. This engagement will also support the national and state objective of achieving 24x7 Power-for-All and will be another step forward in replicating the practices followed by strong central-sector institutions (with whom the Bank has had a long and fruitful engagement) at the state level.

Relationship to CPF

11. The FY 2013-2017 India Country Partnership Strategy⁹ promotes engagement in low-income states to reduce poverty and share prosperity. Continued rapid economic growth is a precondition for poverty reduction and shared prosperity, and to achieve economic growth it is imperative that India is able to provide all of its citizens with affordable and reliable electricity supply, in line with growing demand. The proposed project supports the first and third pillar of the ongoing India Country Partnership Strategy – 'integration' and 'inclusion'. This project, through its focus on strengthening power transmission network and improving operational efficiency in transmission and distribution sector, will facilitate increase in access to electricity supply will spur growth of its productive uses in the state of Jharkhand. Increase in availability of electricity supply will spur growth of its productive uses in the state, leading to enhanced quality of life, inclusive growth, and sustainable development. The project also aligns with the national priority of Government of India as declared under 24x7 PFA program which is also one of the six priority areas of support agreed between the Prime Minister of India and the President of the World Bank. The proposed engagement also builds upon the earlier engagement of the Bank in the state through the State economic report, the multi-sectoral NLTA and the ongoing engagements/ projects under preparation in the areas of agriculture (JOHAR), adolescent girls (TEJASWANI - first GENDER only project in Bank), urban and service delivery.

⁸ This model is well established in India for power transmission sector and a number of inter-state lines are being constructed through this mode after January 2011.

⁹ Report No. 76176-IN, dt. March 21, 2013



C. Proposed Development Objective(s)

Note to Task Teams: The PDO has been pre-populated from the datasheet for the first time for your convenience. Please keep it up to date whenever it is changed in the datasheet.

12. The project development objective (PDO) is to increase the delivery of electricity at the boundaries of the power distribution network in the State of Jharkhand and operational efficiency improvement of power distribution utility of the state

Key Results (From PCN)

13. The key outcome indicators for this program would be:

- Increase in energy transmitted through the intra-state transmission system (GWh)
- Increase in power transmission capacity (MVA)
- Reduction in AT&C Losses in JBVNL (%)

D. Concept Description

14. The proposed World Bank project will support the implementation of the 24x7 PFA plan in the state of Jharkhand through the expansion and strengthening of the intra-state transmission network as well as capacity building of transmission and distribution utilities to improve operational efficiency in the sector.

15. The key components under the proposed project are as follows:

Component A: Intra-state transmission system strengthening

• This component will support the state transmission utility, JUSNL, in making priority investments for expanding and strengthening the intra-state transmission system to increase the system's capacity to transmit additional power within the state. These investments will be based on a load flow analysis already undertaken by JUSNL and cleared by the Central Electricity Authority (CEA). The prioritization of investments will be done on the basis of the phasing analysis which is underway.

• This component will also support JUSNL in setting up emergency restoration systems, implementing an operational communication system within the utility (including sub-stations), and a system to schedule, account, meter and settle transactions in electricity.

Component B: Technical assistance for institutional development and capacity building of JUSNL

This component will support activities for strengthening the project management capabilities and commercial performance of JUSNL. This will cover activities, like a) strengthening business processes for contract management, financial management, human resource management b) assisting with integration of Information & Communications Technology (ICT) in transmission/ integration of renewable energy in the grid, c), supporting in project management d) improving internal IT systems and deploying them for Inventory management, plant maintenance, financial management e) building staff capacity through training, workshops, etc.

Component C: Technical assistance for institutional development and capacity building of JBVNL This component will support JBVNL through activities to strengthen its institutional structure and business processes,



and integrate ICT in day to day operations. Diagnostic studies will be updated in the project preparation phase to prioritize the intervention areas based on the initiatives already underway by JBVNL. Focus areas will include revamping identified business processes related to commercial aspects such as metering, billing, collections; power purchases; procurement; financial and human resources management etc. It will also include strengthening of IT enabled systems for managing both customer facing operations as well as internal functions.

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SAFEGUARDS

A. Project location and salient physical characteristics relevant to the safeguard analysis (if known)

The project will be implemented in urban and rural areas of Jharkhand state, which is located in eastern India, with a population of 33 million (2011 census). Jharkhand state has carved out of the southern part of Bihar on November 15, 2000. Its geographical area is about 79,714 km2 where, at present 29 percent of the state's total landmass is covered by forest, similar to Indian national average of 24 percent. Jharkhand state has a variety of flora and fauna and has one National Park (Betla), which also houses Palamau Tiger reserve. However, based on initial discussions with the implementing agencies, the IAs so not expect investments in the protected areas, and as also seen in previous projects of similar nature, power transmission investments provide some flexibility in sub-project locations, and hence, sensitive parameters can either be avoided or impacts mitigated.

Of the total population of Jharkhand, the share of Scheduled Castes is quite high at 12 percent and Scheduled Tribes at 26 percent. In order to protect the interests of the Scheduled tribes, the provision of Fifth Schedule is enshrined in the Constitution under article 244 (2). Out of 259 blocks in the state of Jharkhand, 112 fall under the Fifth Schedule areas (spread across 15 districts out of 24 districts). Scheduled Castes and Scheduled Tribes are groups having distinct social and cultural identity and being normally "excluded", special attention will be required under the project to ensure their inclusion and equity.

B. Borrower's Institutional Capacity for Safeguard Policies

Jharkhand Urja Sanchar Nigam Limited (JUSNL) would implement the main investment component of the project involving construction of transmission sub-stations and transmission lines while, Jharkhand Bijli Vitran Nigam Limited (JBVNL) would implement the technical assistance component of the project. Both the companies have not worked with a multi-lateral institutions earlier and are newly formed. The Institution capacity of JUSNL, which is expected to handle most of the investments, is reasonably weak. The company has no previous experiences with the World Bank. However, JUSNL is practically involved in several similar activities where the prevailing Indian acts/policies are being applied, thus a required capacity to implement project related safeguards does exist. To fulfill the World bank's safeguards requirements, the project will prepare an Environmental and Social Management Framework SMF (including Resettlement Policy Framework [RPF] and Indigenous Peoples Planning Framework [IPPF]), Environmental and Social Impact Assessments (ESIAs) for identified investments, and resultant Environmental and Social Management Plans (ESMPs). If needed, sub project level Resettlement Action Plans (RAPs) or Indigenous Peoples Development Plan (IPDP) may also be prepared. JUSNL has already initiated the process to appoint a firm to carry out the tasks, and the Terms of Reference (TORs) for undertaking the environmental and social impact assessment would ensure compliance with Bank Safeguard Policies. The



process followed for preparation of the safeguard will be participatory and facilitative with emphasis on information sharing, consultation and feedback. In the long run, the entities will ensure training and capacity building of staff to undertake environmental and social development and safeguards activities. However, it will also require support in capacity in the operationalization of the ESMF, training and capacity building programs and establishing strong institutional arrangement for the safeguard management in the project.

C. Environmental and Social Safeguards Specialists on the Team

Gaurav D. Joshi, Parthapriya Ghosh, Obaidullah Hidayat, Harjot Kaur

D. Policies that might apply

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	OP/BP 4.01 is triggered, since the civil works related to transmission line and substations may have negative impacts, which may be environmentally sensitive. Overall, the anticipated impacts are expected to be reversible, limited in scope and are manageable. Civil works under Component-A of the project may pose issue related to changes to localized drainage patterns, removal of trees/vegetation in the land, excavation activities and handling of chemicals during operations. JUSNL is in the process of hiring a firm which will prepare an environmental and social safeguard management framework applicable for the entire investments also scheme specific ESIAs. Major drive of the ESIAs will be on the analysis of alternative routes, public/stakeholders consultations and preparation of a site specific ESMPs to mitigate environmental risks associated with the project operations. It is expected that the borrower will conduct ESIAs and relevant management plan for the first 30% of investments before negotiation stage (or appraisal for schemes identified). The assessments will cover environmental and social issues related to the siting of transmission lines and substations and will propose routes with least environmental and social impacts. However, ESMF will serve as the guiding document/manual for the project activities during implementation. The project will follow the WBG EHS guidelines.
Natural Habitats OP/BP 4.04	TBD	While the exact locations of sub-project interventions are not currently known, they could potentially affect havens for wildlife and/or other natural habitats. This will be studied and confirmed during project



		preparation.
Forests OP/BP 4.36	TBD	The alignments for proposed lines are currently not fixed. Some of those may pass through forests. The nature and extent of impacts, if any, will be determined as part of project preparation.
Pest Management OP 4.09	TBD	The extent of use of pesticides, if any, will be confirmed during preparation.
Physical Cultural Resources OP/BP 4.11	TBD	Jharkhand State has many areas of physical cultural resources, sites and structures that have archaeological, historical, religious, or other cultural significance. The river Ganges of which Jharkhand forms one of the main stem states is also an iconic cultural resource in the country. It is not yet known if any of the project activities involve or are likely to impact any physical cultural resources. If any of the project activities, including sub-projects finalized during the project preparation phase, involve or are likely to impact physical cultural resources, OP 4.11 will be triggered and a Physical Cultural Resources Management Plan will be prepared.
Indigenous Peoples OP/BP 4.10	Yes	The state has substantial share of Scheduled Tribe population and it is likely that transmission line may pass through tribal areas. In such a case, the project would require to ensure consultation in the Schedule Tribe dominated areas, and a Indigenous Peoples Planning Framework (IPPF) will be prepared as part of ESMF. Based on the assessments and if needed, an Indigenous People Development Plan (IPDP) may also be prepared.
Involuntary Resettlement OP/BP 4.12	Yes	The construction of sub stations would require lands, while construction of new transmission lines would only require Right-of-Way. As the project may need to secure land for the sub-stations, the approaches for doing so would be finalized during project preparation and hence, the policy has been triggered. Since the exact locations of sub stations and alignment of transmission line is not known yet, project is in the process of preparing an ESMF (including RPF as standalone annex as well) that shall detail the methods and process available for securing land and right-of-way (for lines). The ESMF would also discuss issues related to labour influx during construction period. The ESMF and RPF shall provide guidelines for the preparation of SIA and sub project specific RAPs (if applicable). The project will prepare a Gender Action



		Plan to address gender issues.
Safety of Dams OP/BP 4.37	No	This Policy is not triggered
Projects on International Waterways OP/BP 7.50	No	This Policy is not triggered
Projects in Disputed Areas OP/BP 7.60	No	This Policy is not triggered

E. Safeguard Preparation Plan

Tentative target date for preparing the Appraisal Stage PID/ISDS

Oct 23, 2017

Time frame for launching and completing the safeguard-related studies that may be needed. The specific studies and their timing should be specified in the Appraisal Stage PID/ISDS

The JUSNL is in the process of hiring a firm to undertake social and environmental assessments as well as, to prepare their environmental and social management frameworks (ESMF), in conformity with applicable Bank policies as well as the national and state legal stipulations.

Preparation, clearance and disclosure of the ESMF noted above as well as sub-project specific Environmental and Social Impact Assessments (ESIAs) and Management Plans (ESMPs) for the first year (30 percent) interventions, will be completed prior to negotiations (or appraisal for the schemes identified), simultaneous to the preparation of Detailed Project Reports (DPRs) for these sub-projects. The project will include a grievance redress mechanism and will refer to the standard grievance redress system (GRS) of the Bank.

CONTACT POINT

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APPROVAL

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