Millennium Challenge Account Nepal (MCA-Nepal)

Electricity Transmission Project (ETP)
Transmission Line Activity

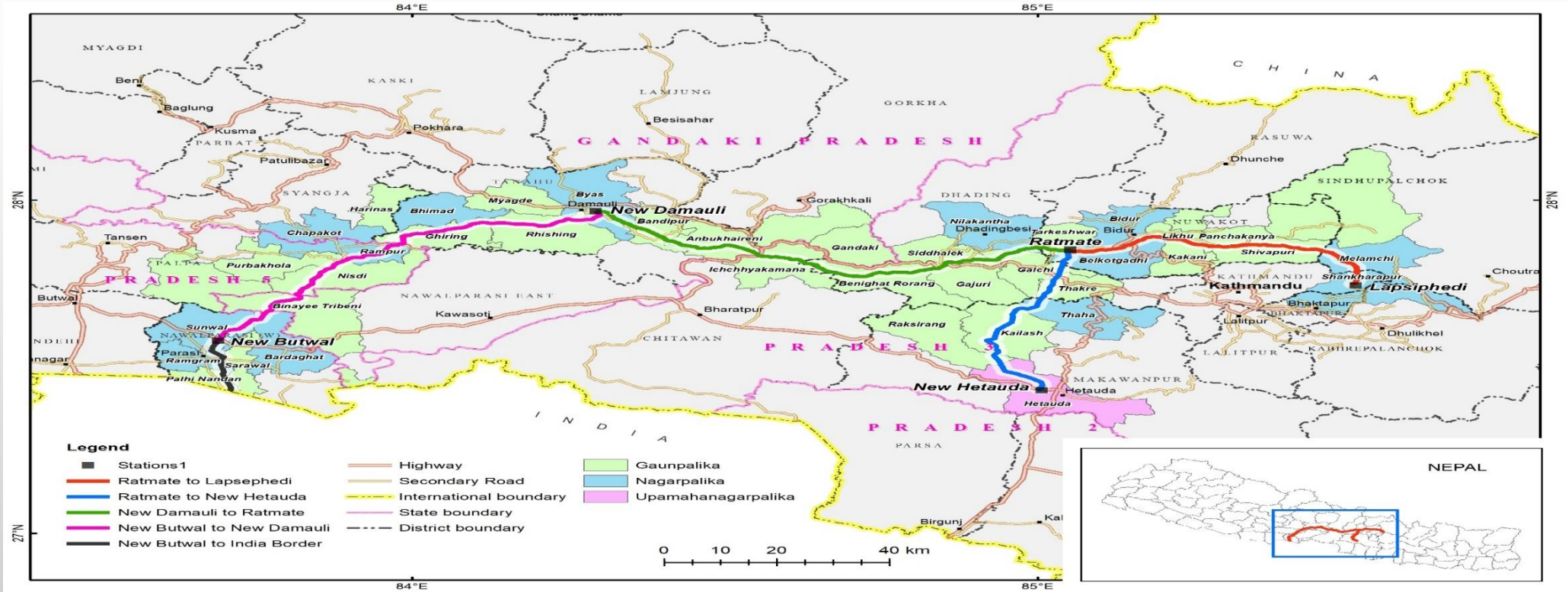
Kathmandu, 20 September 2022

TRANSMISSION LINE ACTIVITY OVERVIEW

Construction of 315 km Double Circuit Quad Moose Conductor Transmission Lines

Line segments has been divided into three Lots:

- **Lot 1: 117 km: Lapsiphedi Substation to Ratmate Substation, ≈ 59 km + Ratmate Substation to New Hetauda Substation, ≈ 58 km**
- **Lot 2: 90 km : Ratmate Substation to New Damauli Substation, ≈ 90 km**
- **Lot 3: 108 km: New Damauli Substation to New Butwal Substation, ≈ 90 km + New Butwal Substation to Nepal/India Border, ≈ 18 km**



Electricity Transmission Line Status

- Transmission Line Route Alignment frozen for all five segments
  - ✓ Lapsiphedi Substation - Ratmate Substation
  - ✓ Ratmate Substation - New Hetauda Substation
  - ✓ Ratmate Substation - New Damauli Substation
  - ✓ New Damauli Substation - New Butwal Substation
  - ✓ New Butwal Substation - Nepal/India Border
- Geotechnical survey works completed
- EIA Approved

Electricity Transmission Line Status (Cont..)

- **Transmission Line Route Alignment frozen for all five segments**

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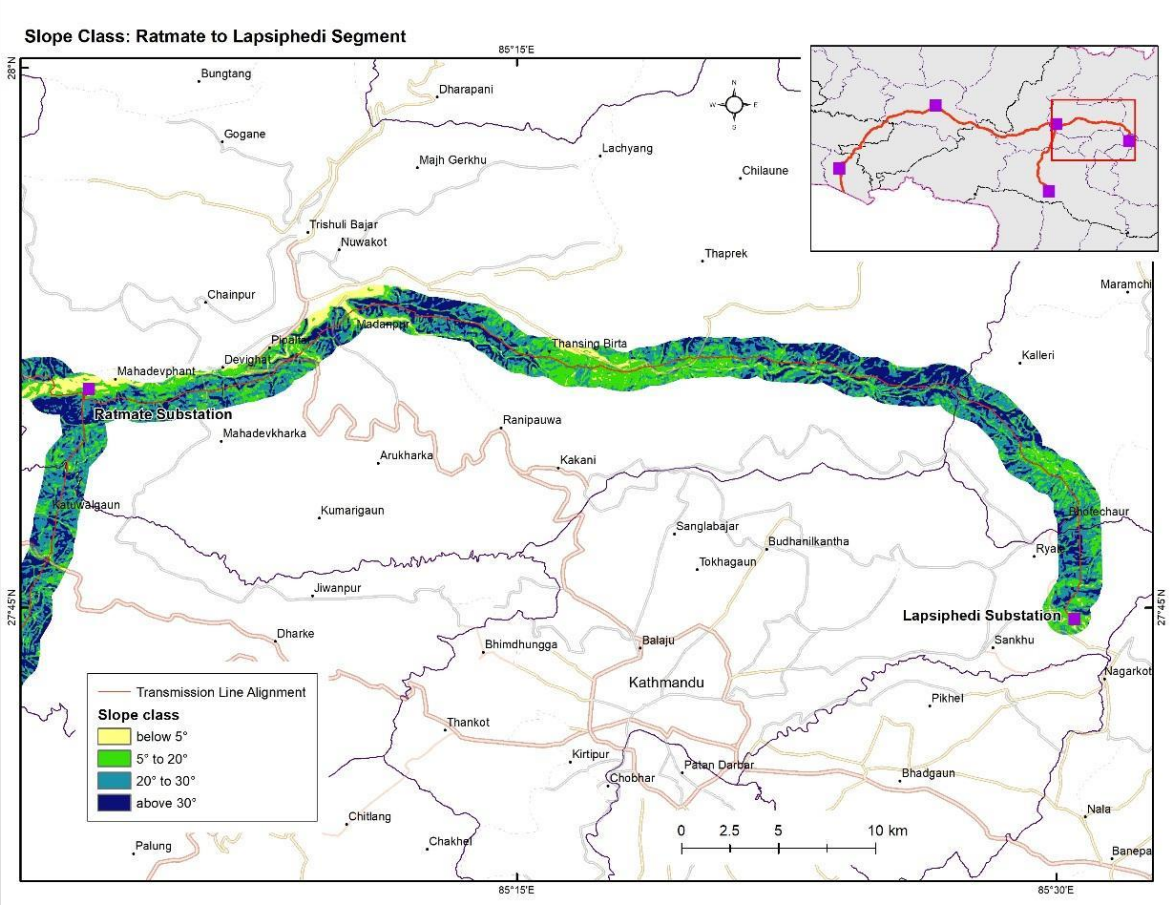
Electricity Transmission Line (Works)

- Transmission Lines
  - ✓ 400 kV D/C; Three Lots, 90-115 km each
  - ✓ 3.5 year execution
  - ✓ Design-Build (FIDIC Yellow Book)
  - ✓ Expected launch: Nov 2022
  - ✓ Quality-Price Based Selection (QPBS)
  - ✓ Expected Contract Sign: August 2023

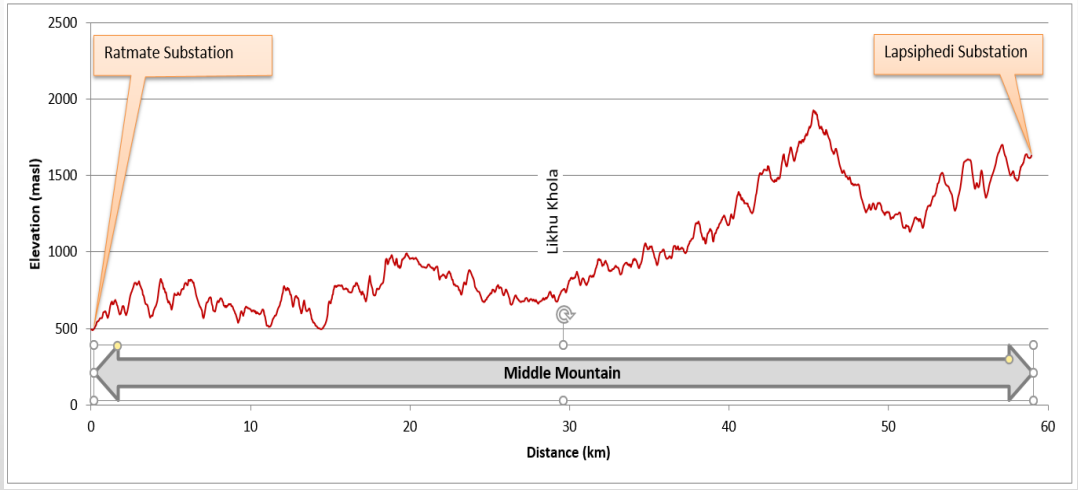
Segment Wise Physical Information

TL Segments	Physiographic Zone (Length Percentile)			Elevation (MASL)	
	Terai	Siwalik	Middle Mountain	Minimum	Maximum
New Butwal Substation - Nepal/India Border	100%			100	120
New Damauli Substation - New Butwal Substation	7%	21%	72%	115	1380
Ratmate Substation - New Damauli Substation			100%	220	1780
Ratmate Substation - New Hetauda Substation		25%	75%	410	1840
Lapsiphedi Substation - Ratmate Substation			100%	490	1918

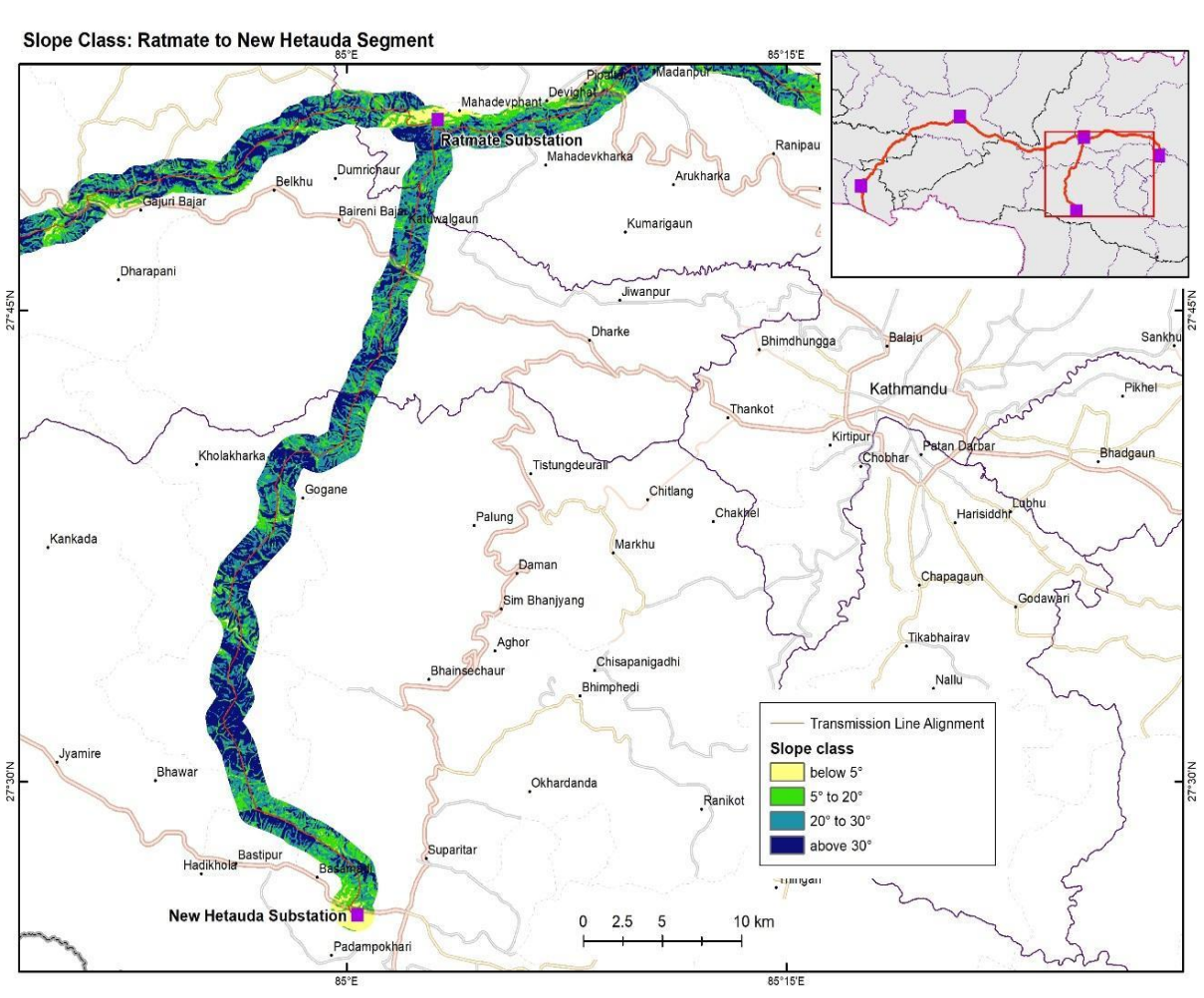
Lapsiphedi Substation-Ratmate Substation-New Hetauda Substation (Lot-1)



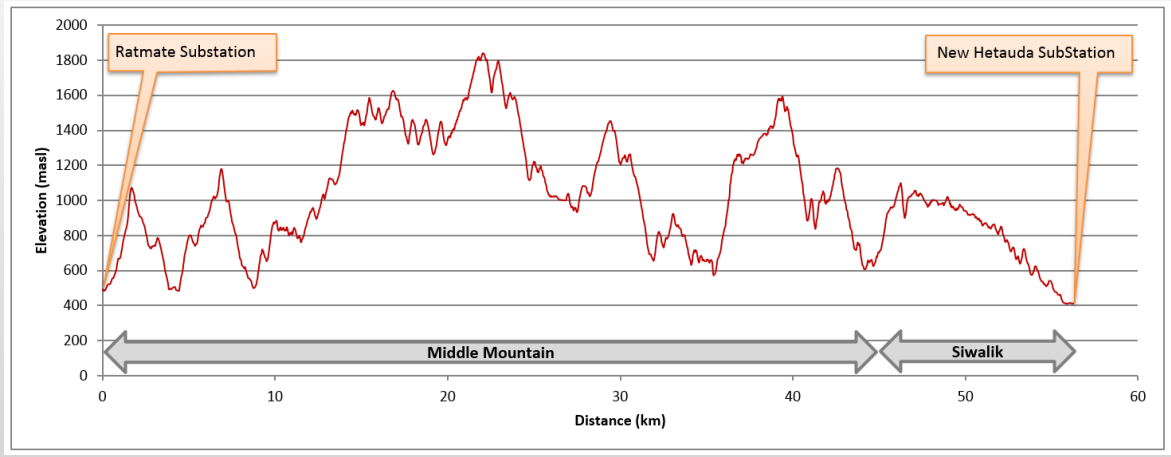
- **Lapsiphedi Substation-Ratmate Substation**
  - ✓ **Physiographic zone: Middle Mountain**
  - ✓ **Length : Approx. 59 km**
  - ✓ **Towers: Approx. 163**
  - ✓ **400 kV Quad Moose Double Circuit**



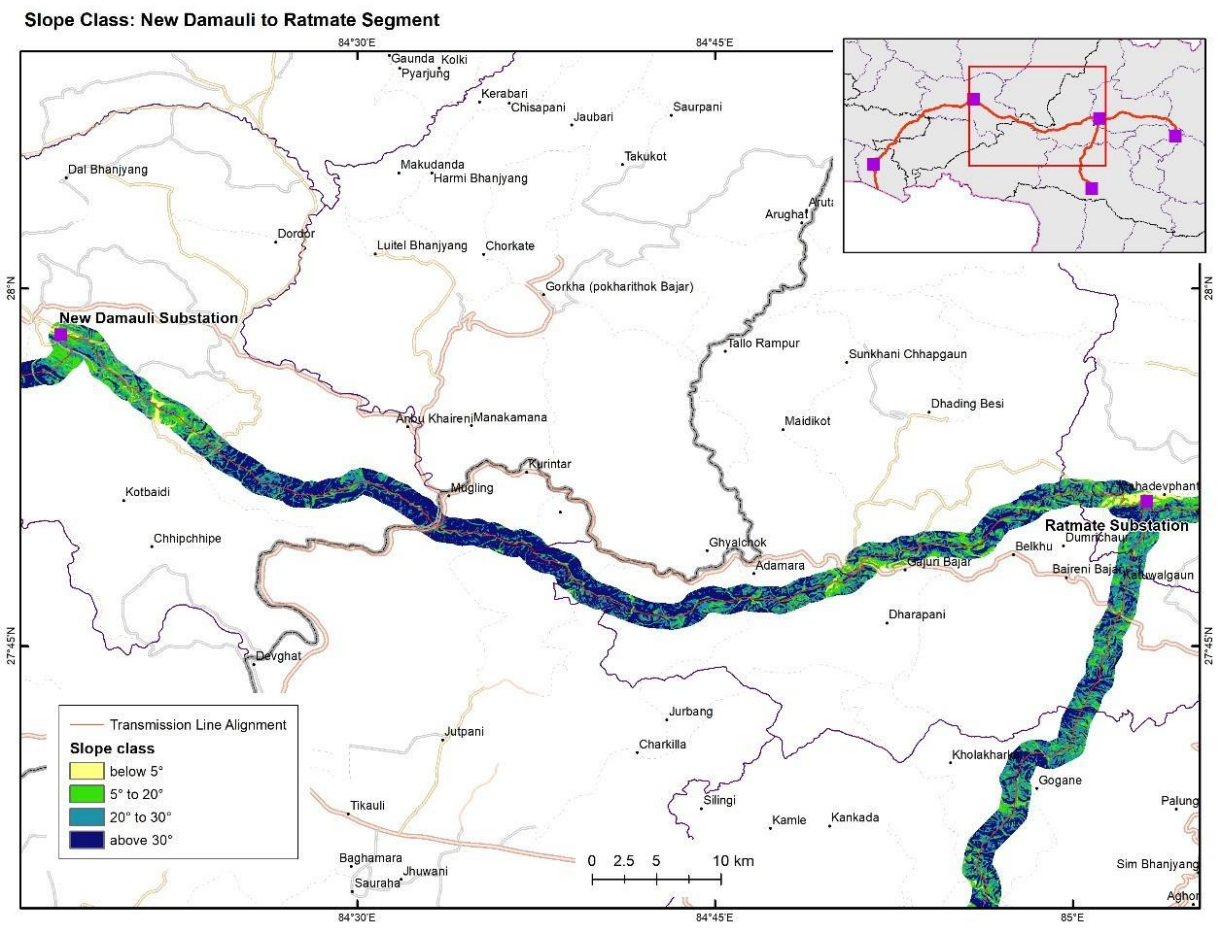
Lapsiphedi Substation-Ratmate Substation-New Hetauda Substation (Lot-1)



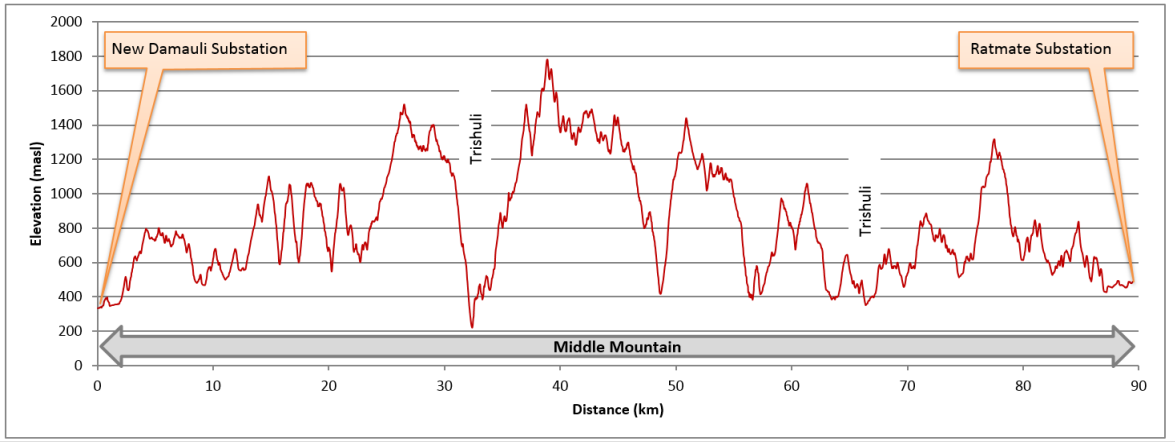
- **Ratmate Substation-New Hetauda Substation**
  - ✓ **Physiographic zone: Middle Mountain & Partly Siwalik**
  - ✓ **Length : Approx. 56 km**
  - ✓ **Towers: Approx. 142**
  - ✓ **400 kV Quad Moose Double Circuit**
  - ✓ **Possibility of few Quad Moose Quad Circuit towers**



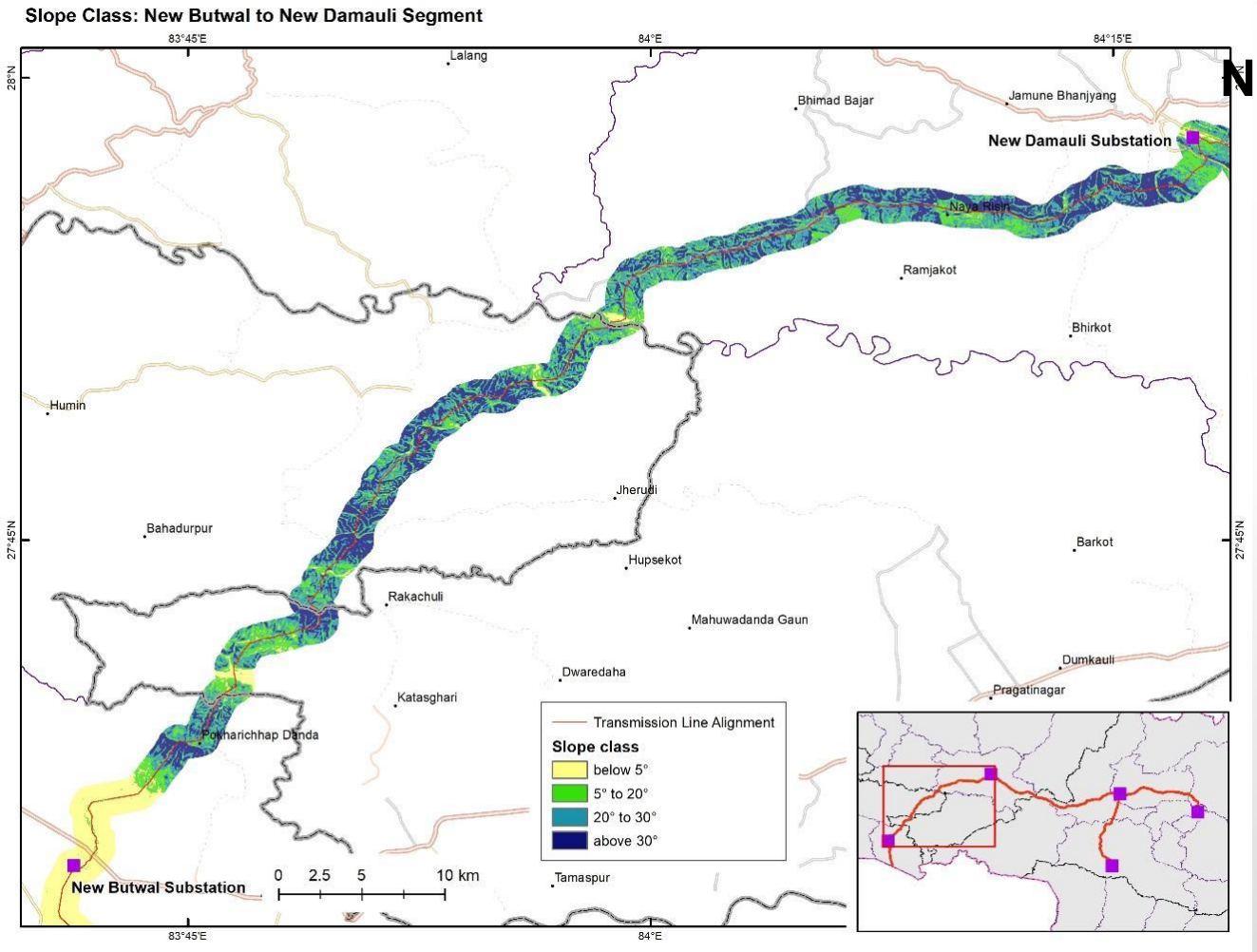
Ratmate Substation - New Damauli Substation (Lot-2)



- **Ratmate Substation - New Damauli Substation**
  - ✓**Physiographic zone: Middle Mountain**
  - ✓**Length : Approx. 89 km**
  - ✓**Towers: Approx. 251**
  - ✓**400 kV Quad Moose Double Circuit**

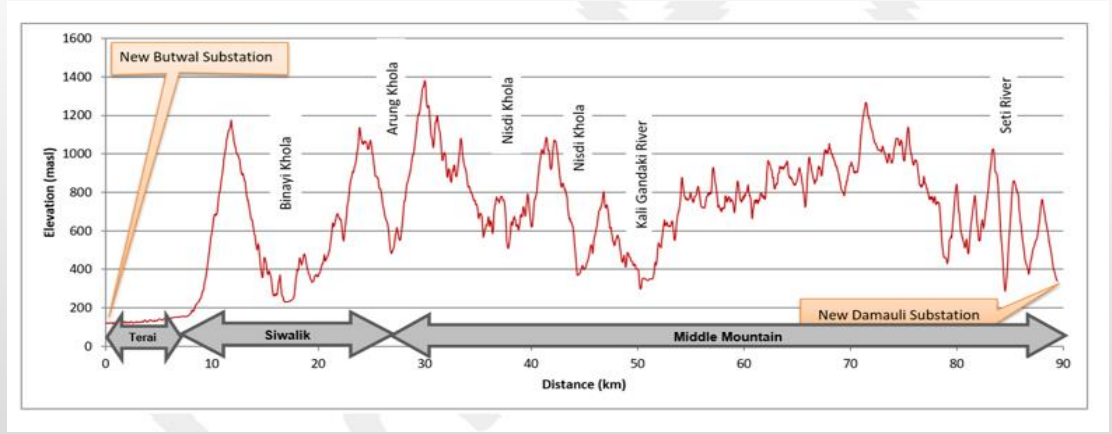


New Damauli Substation - New Butwal Substation – Nepal/India Border (Lot-3 Base)

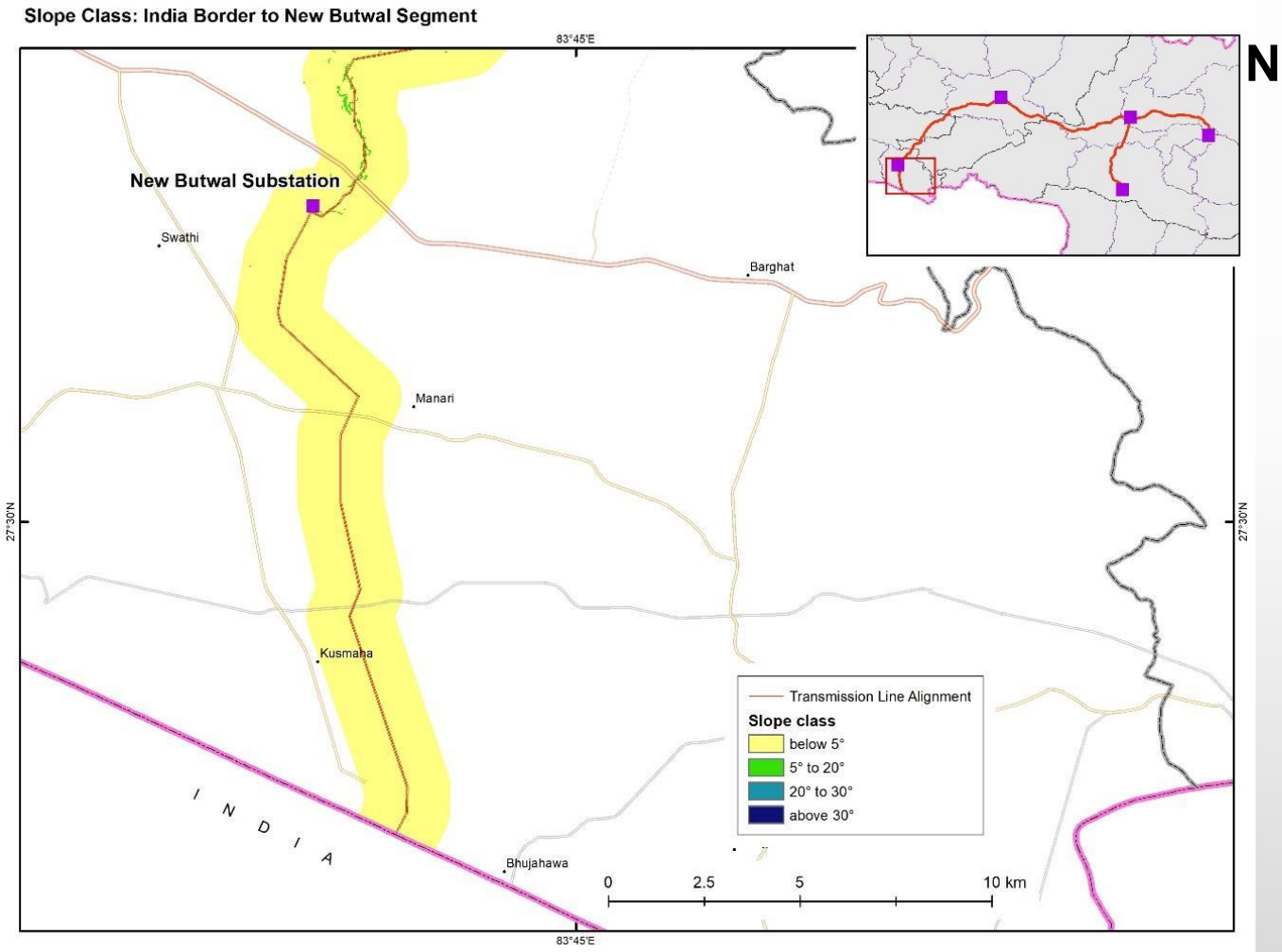


New Damauli Substation - New Butwal substation

- ✓ Physiographic zone: Terai, Siwalik, and Middle Mountains.
- ✓ Length : Approx. 90 km
- ✓ Towers: Approx. 248
- ✓ 400 kV Quad Moose Double Circuit
- ✓ Few Quad Moose Quad Circuit towers near New Butwal substation

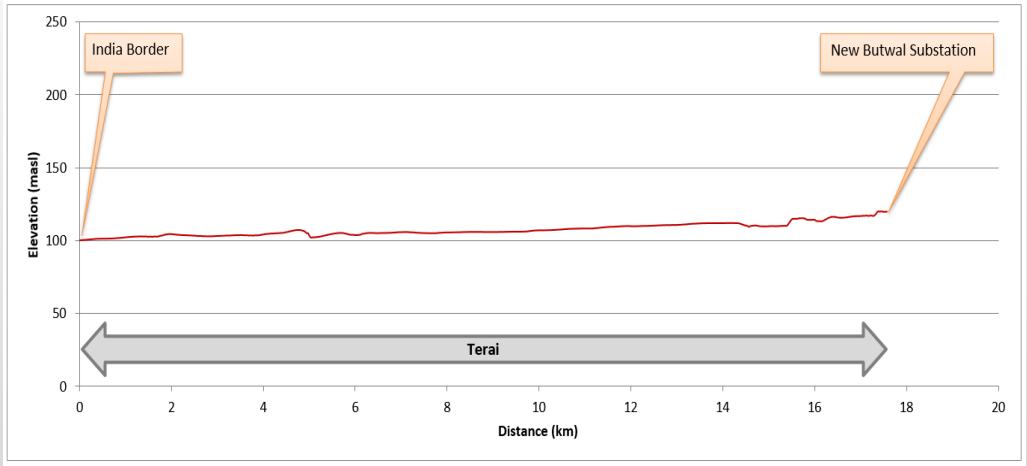


New Damauli Substation - New Butwal Substation – Nepal/India Border (Lot-3 Option)



New Butwal Substation – Nepal/India Border

- ✓Physiographic zone: Terai
- ✓Length : Approx. 18 km
- ✓Towers: Approx. 52
- ✓400 kV Quad Moose Double Circuit



Transmission Line Towers

Tower Types

- ✓ Suspension
- ✓ Tension (mostly)
- ✓ Special Tower (for long spans)
- ✓ Multi Circuit (for corridor issues)

Access Road Classification

Category	Width	Turn Radius	Slope percent	Remarks
1	~5m	min. 90 ft	0 to 15	Generally paved or unpaved and well maintained
2	~3m	Min. 45 ft	0 to 30	Unpaved road in fair condition
3	~2.5m	Min. 20 ft	0 to 45	Unpaved narrow road in poor condition
4	~1.5m	Min. 15 ft	0 to 45	Wide trail in fair condition
5	~0.5m-1m	Min. 6ft	0 to 24	Narrow trail.
6				Aerial access in the only option

Assessment of Road Access

Length of Access Roads per Category in each Segment					
Segment	Road Category (in km)				
	1	2	3	4	5
New Butwal to India Border	49.0	22.2	12.4	8.8	
New Butwal to New Damauli	216.2	86.0	115.1	41.1	45.2
New Damauli to Ratmate	201.5	32.4	156.7	126.8	61.2
Ratmate to Lapsephedi	21.1	65.6	97.3	57.3	25.9
Ratmate to New Hetauda	187.6	96.6	52.9	29.7	28.5

Resettlement and Land Acquisition Status

- **RAP Preparation Activity is ongoing and expected to be completed by August 2023.**

- **Majority of Land acquisition to be completed by August 2024.**

Challenges

- ✓ Difficult Terrain, Accessibility of site, Transportation of Materials
- ✓ Land acquisition and securing easement (RoW)
- ✓ Heavy monsoon season of 3 months (9 months effective construction duration in a year)
- ✓ Major river crossing
  - Trishuli
  - Kali Gandaki
  - Seti

Expected Timeline

S.No	Activities	2022				2023				2024				2025				2026				2027				2028			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
1	Bidding Process (Launching to Signing)																												
3	Contract Commencement																												
4	Detailed and Check Survey																												
5	Foundation work																												
6	Tower Erection work																												
7	Stringing activities																												
8	Energization																												
9	DNP																												
10	Contract Closure																												
11	Project End																												
										42 MONTHS (3 YRS 6 MONTHS) CONSTRUCTION DURATION																			

MCA Partnership Program (Benefit Sharing Component of ETP)

Objective

- ✓ Benefits from infrastructure development to the communities

Activities

- ✓ Thematic Area 1: Extension and upgrading of grid-based electricity distribution system
- ✓ Thematic Area 2: Provision of off-grid electricity solutions
- ✓ Thematic Area 3: Provision of capacity building support to increase benefits of electricity

Environmental and Social Consideration for Transmission Line

- ✓ Comply MCA-Nepal ESHSMP (Environmental Social Health and Safety Management Plan) and ESMS (Environment and Social Management System).
- ✓ Develop and implement CESHMP (Contractors Environmental Social Health and Safety Management Plan) guided by MCA-Nepal ESHSMP.
- ✓ Comply and implement Grievance Redressal Mechanism outlined in the Stakeholder Engagement Plan (SEP).
- ✓ Undertake clear consultation and communication with local people and associated stakeholders during construction.

Health and Safety Protocol

- Health and safety orientation/ training shall remind the field crews about the potential health and safety hazards associated with construction.
- Should prepare a site specific health & safety plan. Appropriate PPE (Personal Protective Equipment) such as Safety Jacket, Helmet, Safety Boots, gloves, mask, etc. shall be used according to the nature of work, as and when required as per Project Specific Safety Plan requirements.
- Follow the protocol established by MCA-Nepal and Consultant.
- Immediately update the Consultant/MCA-Nepal team for any project related issues.

GSI Consideration for Transmission Line

- ✓ **Comply MCA-Nepal Social and Gender Integration Plan**
- ✓ **Develop and implement Trafficking-In-Persons Risk Management Plan**
- ✓ **Employment opportunities for Socially disadvantaged groups like women, *dalits, Janajati, etc.* should be a priority.**
- ✓ **Ensure safe and harassment free working environment.**

Project Task and Sensitivity

- National Pride Project
- Follow MCC Environmental Guidelines and IFC Performance Standards, National and MCC policy provisions on Environmental and Social Sustainability.
- Absolute need to “be” and “look” Politically neutral in every aspects during project construction.
- Follow MCC Gender Policy and Counter Trafficking-in-persons policy

https://www.mcc.gov/resources/doc/gender-policy

https://www.mcc.gov/resources/doc/policy-counter-trafficking-in-persons

For More Information

- For MCA-Nepal business opportunities, please visit: www.mcanp.org
- For Q&A regarding the procurement, please contact: info@mcanp.org
- MCC-funded business opportunities, please visit: www.mcc.gov/work-with-us

Fostering economic growth with better access to electricity and roads.