



 **Norway**

ADB



Lighting the Path to Empowerment

A Model for GESI Responsive Electrification

Lessons Learned from ADB TA 6526 NEP:
Implementation Support for Gender Equality and Social Inclusion

ENERGIA
INTERNATIONAL NETWORK ON
GENDER & SUSTAINABLE ENERGY

Hivos
people unlimited





TABLE OF CONTENTS

Executive Summary	4
01. Background and Introduction	5
02. Energy for livelihoods: A new approach to PUE for women and disadvantaged communities	9
03. Taking electricity to the last mile communities	19
04. The power within: Institutionalizing GESI within Electric Utilities	28
05. Final Insights: Shaping GESI-responsive electrification programs	36

Executive Summary

Between 2021 and 2025, the ADB TA 6526 NEP project demonstrated that electrification becomes transformative when it purposefully integrates Gender Equality and Social Inclusion (GESI) principles and approaches. Working in Nepal's Madhesh Province, Kathmandu Valley, Bharatpur and Pokhara, the project reached electricity to 1,300 previously unelectrified households, supported 403 entrepreneurs (primarily women and disadvantaged groups) to create new business opportunities and strengthen existing business ventures through improved productive use of energy, and helped institutionalize GESI within the Nepal Electricity Authority (NEA).

This document synthesizes critical lessons learned from the field to guide future electrification efforts that truly empower women and disadvantaged communities.



01 | Background and Introduction

1.1 About the document

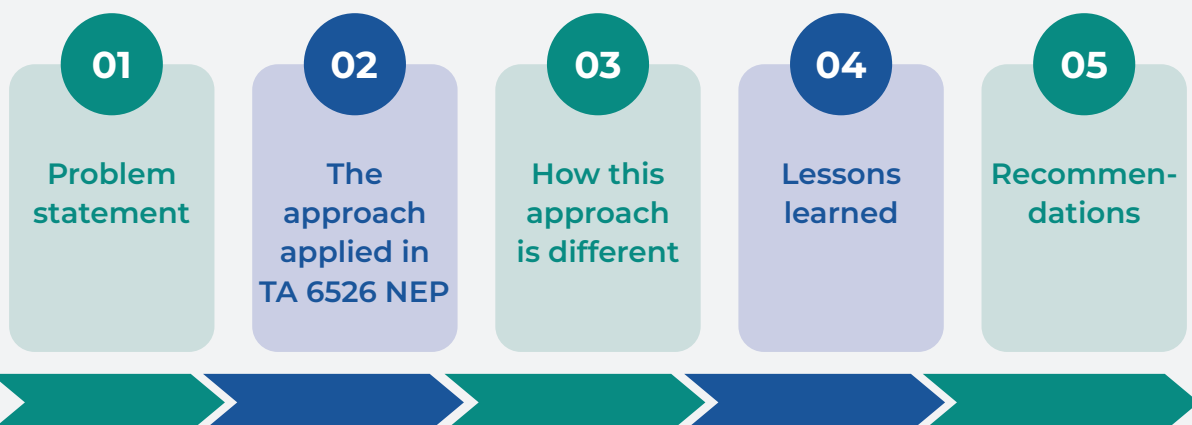
Between 2021 and 2025, the Technical Assistance (TA) project **ADB TA 6526 NEP: Implementation Support for Gender Equality and Social Inclusion**, was implemented in Nepal. Over the four-year period, the TA project demonstrated that electrification is more than building infrastructure: it can empower women and disadvantaged groups, improve lives, generate jobs, stimulate local economies and bring about inclusion, equity and social transformation.

TA 6526 NEP offers a replicable model for integrating Gender Equality and Social Inclusion (GESI) into energy systems. It shows that an intentional integration of GESI principles into electrification leads to more effective, sustainable energy outcomes and inclusive social development.

This document summarizes key lessons from the implementation of this gender and socially inclusive electrification project using grid electricity. Documenting these approaches and lessons will help in the future conception and design of GESI-responsive electrification programs, those that are aligned with the needs of women and disadvantaged communities.

In this document, lessons are organized under three pillars: promoting productive use of energy for women and disadvantaged communities, expanding electricity access for last mile communities, and institutionalization of GESI within the national electricity utility. For each of these pillars, we examine the following:

FIGURE 1. THE FRAMEWORK FOR ANALYSIS



1.2 An Overview of TA 6526 NEP

In 2015, Nepal adopted its new constitution which emphasizes the need to develop energy for economic development. A central focus of Nepal's constitution is a strong commitment to GESI, with the aim to achieve “gender equality, proportional inclusion, participation and social justice” for its people.

In 2020, the Nepal Electricity Authority (NEA) adopted the GESI Strategy and Operational Guidelines with a mission to “ensure that the NEA is an inclusive and equal opportunity organization that provides electricity services to the Nepalese population in a manner that contributes to the economic and social empowerment of men, women and all individuals at risk of exclusion and to the sustainable development of Nepal”.

TA 6526 NEP AT A GLANCE

TA 6526 NEP

was implemented between

APRIL 2021 AND OCTOBER 2025

supported by the

**ASIAN DEVELOPMENT BANK (ADB) and
THE ROYAL NORWEGIAN EMBASSY, NEPAL (RNE).**

It aims to

**ASSIST NEA IN IMPLEMENTATION OF THE GESI ACTION PLAN OF
THE SOUTH ASIA SUBREGIONAL ECONOMIC COOPERATION (SASEC)
POWER TRANSMISSION AND DISTRIBUTION SYSTEM STRENGTHENING
PROJECT (PTDSSP).**

The PTDSSP aims to

**REINFORCE AND MODERNIZE THE POWER SUPPLY SYSTEM IN
KATHMANDU VALLEY, MADHESH PROVINCE AND SELECTED AREAS IN
BHARATPUR AND POKHARA.**

TA 6526 NEP project sought to assist NEA to institutionalize gender and social inclusion principles in its operations. At the same time, it supported women and disadvantaged groups in Madhesh Province to productively use energy with safety and efficiency. The TA was implemented by the Humanist Institute for Development Cooperation (Hivos), Netherlands, with Centre for Rural Technology (CRT/N), Nepal and National Association of Community Electricity Users-Nepal (NACEUN).

For the TA project, operationalizing the GESI agenda in NEA included the following actions:

At the ground level in Madhesh Province, demonstrating:

- A model by which NEA can support the most disadvantaged, or the last mile consumers to gain access to electricity and benefit from electricity services,

- How to support women and the disadvantaged to adopt Productive Use of Energy (PUE) applications and strengthen their livelihoods,
- How to design and conduct awareness programs on electrical safety, electricity conservation, electricity thefts and PUE, and
- How to promote electric cooking in a GESI-responsive manner.

AND

At the institutional level, outlining:

- An institutional set up for mainstreaming GESI concerns within the organization,
- Building awareness, understanding and ownership on GESI across NEA,
- Piloting GESI-responsive measures in DCSs and NEA projects,
- Supporting NEA to develop and implement inclusive policies for the prevention of SEAH (Sexual exploitation, abuse and harassment), and
- Fostering organizational commitment and ownership.

1.3 Achievements of TA 6526 NEP

- The TA team supported NEA to embark on a GESI mainstreaming process, developing a GESI operational framework and building its internal capacity to address GESI issues. By doing so and together with multiple stakeholders, the TA improved the capacity of NEA to provide reliable, affordable and inclusive services.
- In Madhesh Province, the TA project pioneered an inclusive electrification model that brings power to poor and disadvantages communities, increases the community's awareness on electricity use and safety, fosters local job creation and strengthens local economies.
- It demonstrated a model for using electricity for strengthening livelihoods of women and disadvantaged communities in Madhesh Province.
- The TA project adopted a demand-driven and collaborative implementation model. Multiple stakeholders including the utility, local government and other local institutions were engaged in this process.
- The approach resonated well with NEA as well as with the local institutions and the beneficiaries/ entrepreneurs/ local communities and received a very high buy-in.



Babita Kumari Shah with her fibre making machine in Kalaiya

By embedding the TA activities within local institutions, the interest and capacities of the local institutions was built systematically and ensured local ownership and sustainability of efforts. By the end of the TA project, these organizations are confident and capable enough to continue this role. As explained below and building on lessons learned, an electrification model has been developed that promotes gender equality and social inclusion, setting a benchmark for scalable and sustainable energy access.

1.4 The Concept of a GESI-Responsive Electrification Model

GESI stands for Gender Equality and Social Inclusion. It is a concept that addresses unequal power relations between women and men and between different social groups. GESI-responsive electrification means electrification initiatives that are designed, implemented, and monitored in ways that actively promote equitable participation and equitable benefits for women and disadvantaged groups.

GESI-responsive electrification is both a process and an outcome where electrification initiatives prioritize social equity and gender equality by ensuring meaningful participation, equitable access to benefits and empowerment of women and disadvantaged communities, and an inclusive, diverse and harmonious environment at work for employees of all gender and social groups.

This approach results in electrification efforts that are not just technically effective but socially just and sustainable.

Core features of GESI-responsive electrification



Meaningful participation of all gender identities and disadvantaged communities, in all stages, from planning to implementation to monitoring electrification activities



Equitable access to electrification services, addressing specific needs such as affordability, safety and spatial limitations, and removing barriers faced by women and other disadvantaged groups



Empowerment of women and disadvantaged groups to use electricity services for improved quality of life, strengthening livelihoods and combating poverty



An inclusive, diverse and harmonious working environment for employees that offers equal opportunities for all and supports women and disadvantaged groups to benefit from jobs and leadership roles within the organization

02

Energy for livelihoods: A new approach to PUE for women and disadvantaged communities

2.1 Problem statement

PUE enables communities to convert electricity into income, leading to resilience, agency and economic empowerment. In Madhesh Province, the target group for the TA was women and the poor and disadvantaged communities. Constraints to promoting PUE among these groups are:

**45%**

of the population are economically active, as against the national average of 55%.¹

**80%**

of the 500,000+ youth are unskilled and have limited employability.

**Only 57.4%**

of women are literate (male literacy rate 75.1%) and 38.5% of women are employed.

The society is patriarchal with pervasive gender norms, which means limited access to resources, limited mobility, and limited decision-making power for women.

Other constraints to promoting PUE include low education level, unfavourable local markets, limited use of technologies and a sparse formal banking system.

¹ Source: National Population and Housing Census 2021.
<https://censusnepal.cbs.gov.np/results/downloads/national>

2.2 The approach applied in TA 6526 NEP



1. Understanding the entrepreneurial landscape

- Mapping entrepreneurship potential, opportunities, challenges and capacity gaps for different value chains
- Identifying local stakeholders to engage with



2. Building functional partnerships

- Zeroing in on local implementation partners
- Building their interest in PUE and strengthening their capacities (technical and institutional)
- The electric utility supporting PUE by ensuring a strong and reliable electricity supply system



3. Selecting potential entrepreneurs to work with

- Clear selection criteria
- Selection process led by local implementation partners and local governments
- In-depth orientation of entrepreneurs, together with families
- Validation of family endorsement and commitment



4. Rolling out an enterprise development package

- Training (entrepreneurship, business management, technology and technical skills, empowerment)
- Business upgradation support (business planning, registration, bookkeeping, inventory management, taxation)
- Improved energy management measures (including adoption of efficient, safe appliances) based on systematic electricity system checks
- Access to technology, finance and other resources, including government subsidies, business insurance (including agriculture and livestock), and cooperative schemes
- Linkages with suppliers, markets and other stakeholders
- Customized, entrepreneur-specific hand-holding support



5. Access to energy-efficient technologies

- In Madhesh Province, the women and disadvantaged communities who were supported as entrepreneurs are poor and found it extremely difficult to arrange for investment capital. Accordingly, partial financial support was provided to the entrepreneurs to acquire improved technologies.

Technologies Promoted for PUE

- **Agriculture:** Electricity powered irrigation systems, mechanized tilling equipment, and technologies enabling crop diversification, including off-season vegetable farming.
- **Agro processing:** Efficient milling, husking, hulling, and oil-pressing machinery to add value to agricultural produce.
- **Animal husbandry:** Solutions for managing livestock such as cattle, goats, and pigs; energy-based lighting, heating, and cooling for poultry; and mechanized milking systems.
- **Micro-businesses & productive machinery:** Small-scale fabrication tools, food processing units, sewing machines, and equipment for beauty parlours and eateries.
- **Mobility:** Electric rickshaws and three-wheelers promoting sustainable and affordable transport options.



6. Ensuring sustainability

- Strengthening institutions
- Embedding best practices in local government
- Strengthening electricity infrastructure necessary for PUE
- Sensitizing stakeholders such as funders, governments and development organizations on specific characteristics of PUE needs and interventions to provoke an integrated, flexible approach in PUE promotion

Achievements of the TA project

- 442 entrepreneurs, of which 52.7% are women led enterprises and 72.2% from disadvantaged communities, received business management and entrepreneurship training integrating an empowerment approach. The majority of these are micro-entrepreneurs.
- By September 2025, 403 entrepreneurs supported by the project were operational.
- 39 entrepreneurs (8.8%) dropped out during the project, primarily due to personal circumstances or challenges in securing investment.
- 97% of the supported entrepreneurs improved their business practices or expanded their enterprises, driving local job creation and economic growth.
- 98% of the supported entrepreneurs made investments in their businesses, totalling to more than NPR 101 million, equivalent to US\$717,000.
- 97% of supported entrepreneurs improved their business practices or expanded their enterprises, driving local job creation and economic growth.
- 298 entrepreneurs accessed technology support through the TA project. The investment made in acquiring new technologies by the entrepreneurs was more than the support for technologies provided to the entrepreneurs from the TA project – demonstrating strong commitment and co-ownership.
- 96.5% of the active entrepreneurs improved their energy use practices.
- 99% of the entrepreneurs started keeping books of accounts. Prior to the TA project, 1.4% were following the practice.
- The total amount leveraged as support from government agencies and other projects/ programs is about NPR 7 million (equals USD 7000).

Data based on endline survey conducted in September 2025

2.3 How the TA approach is different: key differentiators

The promise of PUE is to expand economic opportunities for people living in poverty by enhancing economic earning potential and resilience among low-income communities. A livelihoods approach to productive use of energy is one that transforms livelihoods: it embeds energy solutions within livelihood enhancement for the poor, helping communities to escape poverty and improve resilience.

The livelihoods approach takes a different standpoint of PUE from the traditional

The basic premise of the livelihoods approach to PUE is that energy is necessary but insufficient; sustainable livelihood transformation requires addressing multiple interconnected barriers simultaneously.

Source: [Transforming livelihoods through scaling up the productive use of energy](#) | International Growth Centre

one. In traditional PUE, specific technologies/appliances are promoted (pre-determined solutions), while the livelihoods approach focuses on increasing users' capabilities to produce and generate income rather than just providing electricity. In this scheme of things, energy is recognized as one of the many inputs required to do so. Another distinction in the approach adopted by the TA project is that for each enterprise, technicians undertook an assessment of the electrical systems and supported the entrepreneurs to make improvements in the way energy is used in the enterprise. This was done by adjusting and optimizing energy, introducing systems and often simple procedures to reduce energy requirements per unit of output and make the enterprises safer and improve productivity.



Duna Tapari women of Parsa

A Livelihoods Approach to PUE Includes:

- Gap assessment to identify promising value-chains, market opportunities and challenges; skill gaps and training needs; financing options; existing policies, and plans and budget of the local governments
- Capacity development, focusing on business practice, technology and skill development
- Adoption of energy-efficient, productivity enhancing technologies and mechanization
- Energy management improvement measures
- Access to finance and other resources
- Market linkages and value addition
- Extension services for improved practices (modern techniques, disease management, input supply and business development support)

Key differentiators from a traditional PUE model

ASPECT	TRADITIONAL PUE APPROACH	ENERGY FOR LIVELIHOODS APPROACH
Overall focus	Promote specific technologies and appliances Technology push: how to promote specific technologies	Strengthens overall livelihood capabilities for income generation Demand-pull: What does each entrepreneur need?
Core objective	Increase energy consumption for productive activities	Transformation of livelihoods, focusing on poverty reduction
Entry point	How can energy-efficient technology improve incomes?	What capabilities, resources and system changes do entrepreneurs/businesses need to strengthen their livelihoods?
Intervention design	Business improvement focused on energy service as the single solution (single input)	Energy as one input among many needed (multi-faceted support package)

Intervention package	Technology, technical training, equipment financing	Systematic gap assessment, business management, skills and technology training, agency-based empowerment ² , access to finance and markets, continued mentoring, extension services
Energy management	Focus on specific technology and its use	Systematic energy assessments to optimize consumption, improve safety and productivity
Gender-responsiveness	Gender-neutral	Gender-responsive approach including engaging families, addressing issues of women's agency and decision-making, mobility and other constraints
Stakeholder engagement	Primarily energy sector	Multi-sectoral ecosystem approach including energy utilities; agriculture/livestock departments; financial institutions, market actors, local government and community organizations

2.4 Scalable Lessons and Recommendations

Lessons for practitioners: A summary

- **Needs based, demand driven and adaptive.** PUE interventions must be needs-based, demand-driven, and adapted to local contexts to ensure relevance, effectiveness, and sustainability.
- **Ecosystem thinking:** PUE thrives when energy, finance, entrepreneurship, and governance inputs align together.
- **Reliable electric supply:** A strong and reliable electricity supply is a must for PUE, which the electric utility must ensure.
- **Beyond technology:** Capacity building must include agency, mentoring and marketing.
- **Learning technology is easier than accessing markets.** Market linkage support must be prioritized in PUE programs and connections should be facilitated with suppliers, buyers, and market networks.
- **Family engagement:** Involving men and boys boosts women's entrepreneurial success.
- **Gender matters at every step of the entrepreneurial journey.**
- **Realistic expectations:** Poor entrepreneurs often diversify rather than scale rapidly.

² Adapted from the Empowered Entrepreneur Handbook (2015). cleancooking.org/wp-content/uploads/2021/07/342-1.pdf

2.4.1 The PUE intervention package must be need-based, demand-driven and adapted to local contexts.

LESSON

The intervention package for PUE needs to be designed across the growth stages that entrepreneurs go through. Engaging women and disadvantaged groups early in the planning process is necessary to ensure that the interventions are based on a realistic assessment of their present capacities and needs. A continuous process of engagement through mentoring enables the team as well as the entrepreneurs to reflect on their needs, enabling real-time adjustment to needs, challenges and to tap into opportunities.

RECOMMENDATIONS

- Design flexible PUE intervention packages that can be adapted to different entrepreneurial growth stages.
- Establish continuous mentoring systems that allow for regular needs assessment and responsive support.
- Engage target communities early in the planning process to ensure interventions match their actual capacities and constraints.

2.4.2 Think of the ecosystem and not technology alone.

LESSON

An 'ecosystem approach' for PUE interventions means a coordinated effort with a wide variety of stakeholders and across sectors, providing support measures to enable market growth, stimulate demand and increase supply. Critical inputs that entrepreneurs need include technological support, capacity building on multiple skills, incubation, and market linkages. No single intervention succeeds in isolation. This necessitates coordination and information sharing across many different sectors and actors (energy, agriculture, livestock, credit financial institutions, utility, local government authorities, among others. The total amount that was leveraged as support from government agencies and other projects/ programs is about NPR 7 million.

RECOMMENDATIONS

- Establish multi-stakeholder coordination platforms that bring together energy, agriculture, livestock, business, financial institutions, utilities, and local government authorities.
- Allocate dedicated resources for providing partial financial support to poor and disadvantaged entrepreneurs for technology acquisition.

2.4.3 A strong and reliable electricity supply is a must for PUE.

LESSON

Stable and reliable electricity supply enables productive uses such as agro-processing, irrigation, poultry and small-scale manufacturing. In its absence, many productive uses are simply not possible. If the electricity supply is unreliable, it can result in frequent disruptions, equipment damage and ultimately, financial losses. Hence when promoting PUE based on grid electricity, the utility (NEA in this case) has a key role in ensuring that the electricity supply is adequate and reliable.

RECOMMENDATIONS

- Ensure that utility strengthens infrastructure to support reliable electricity supply for productive uses.

2.4.4 Capacity building needs to go beyond technical training.

LESSON

Successful entrepreneurs, especially women and disadvantaged groups, need business management, specific skills-based training, accounts management, financial literacy, empowerment training, and ongoing mentoring, not just equipment operation skills. Building the capacity of local women and men requires empowering them economically but also helping break gender stereotypes.

RECOMMENDATIONS

- Develop comprehensive capacity building programs that integrate technical skills, business management, financial literacy, and empowerment components.
- Ensure post-training mentoring and hand-holding support is provided for at least one year.
- Include both women and men in training to break gender stereotypes and build household-level support.

2.4.5 Learning technology is easier than accessing markets.

LESSON

Most entrepreneurs can adopt and learn the use of technologies easily but find it difficult to understand how markets operate and how to access markets. Along with the technology, entrepreneurs must understand the economics of the technology for the customer, its value proposition, and a market strategy to create viable businesses.

RECOMMENDATIONS

- Prioritize market linkage support in PUE programs. Provide training on market dynamics, value proposition development, and business planning.
- Facilitate connections with suppliers, buyers, and market networks. Consider establishing market access support teams or marketing experts that work alongside technical trainers.

2.4.6 Engage families, especially men and boys.

LESSON

Women entrepreneurs need family buy-in from the start. In the TA project, early engagement of husbands and male family members proved critical for securing consent, addressing mobility challenges, investment support, and relief from household burdens to engage in entrepreneurial activities.

RECOMMENDATIONS

- Make family engagement a mandatory component of entrepreneur selection and orientation processes. Conduct separate sessions with family members to secure their commitment.
- Develop communication materials that help families understand the benefits of supporting women's entrepreneurship and what it entails.

2.4.7 Gender matters at every step of the entrepreneurial journey.

LESSON

Women entrepreneurs face unique obstacles: limited financial decision-making power, mobility constraints and time poverty. These must be recognized and tackled. Men often have greater access to the resources needed to purchase PUE appliances than women do, as women face more constraints around financial decision-making, which can lead to investment decisions that primarily benefit men.

RECOMMENDATIONS

- Don't assume men's and women's barriers are the same. Find out what constraints women face.
- Support women with sufficient information to make informed decisions on their enterprises, including financial decisions.
- Training must be at safe, convenient and culturally appropriate locations with childcare support.

2.4.8 When working with women and the poorest, don't expect rapid business growth.

LESSON

100% of the entrepreneurs we worked with are poor and vulnerable to business shocks. The project discovered technology, access to finance and market links as the principal barriers to their growth. The project invested heavily in supporting entrepreneurs to expand their markets, in helping them gain access to capital, and in connecting them with ongoing government programs. Despite the comprehensive and continued support, many entrepreneurs struggled to grow, battling with a range of constraints, most emanating from poverty. Among these, the ones that demonstrated better growth were, expectedly, those that were better off and had access to capital. Despite the support provided though, it is evident that many micro-entrepreneurs are hesitant to scale up for the fear of losing their existing assets. They prefer diversifying their business lines to spread risks and stabilize their incomes.

RECOMMENDATIONS

- Set realistic growth expectations and timelines for poor and disadvantaged entrepreneurs. Plan for extended support periods of at least 2-3 years.
- Accept business diversification as a valid growth strategy rather than focusing only on scaling up single enterprises.
- Provide risk mitigation mechanisms such as insurance or emergency funds to reduce fear of asset loss.

2.5 Conclusion

The energy for livelihoods approach to PUE demonstrates that supporting women and disadvantaged communities requires going beyond technology provision. Success depends on comprehensive ecosystem support, adaptive programming, family engagement, and recognition of the specific challenges faced by women and poor entrepreneurs. Scaling these lessons can help ensure PUE interventions genuinely transform livelihoods rather than just promoting appliances.



Singata Paudel Gautam with her electrical chaff-cutter

03

Taking electricity to the last mile communities

3.1 Problem statement: Why do households remain unelectrified?

Nepal has made significant strides in expanding electricity access, with over 99% of households now connected to the grid. Madhesh Province leads the country in terms of electrification rate, and NEA plays a central role in this progress, serving over a million consumers in Madhesh, 89.13% of whom are domestic, reached through 23 Distribution Centers (DCSs). Despite this impressive coverage, several challenges persist, leaving pockets of the population in Madhesh Province without reliable or affordable access to electricity. These challenges include:

- **Economic barriers:** Many households face financial hardship and cannot afford the average grid connection cost of NPR 5,000 (approx. US\$ 35), especially those with unstable or seasonal incomes.
- **Documentation issues:** Many Madhesis in these pockets do not have citizenship certificates, despite having lived for several generations in the province. Without a citizenship certificate, they cannot get land registration deeds (lalpurja). Without these, they must pay an additional security deposit (dharauti) to access electricity. Disadvantaged groups like the Doms and the Musahars, who are historically landless, are particularly affected.
- **Lack of awareness:** Many individuals are unaware of the procedures and documentation required to obtain an electricity connection.
- **Quality and reliability concerns:** Even among electrified households, issues such as frequent power interruptions, inconsistent voltage levels, and aging infrastructure compromise the reliability and safety of electricity supply.
- **Electricity theft:** Unauthorized connections, meter tampering, and direct tapping into power lines are widespread, especially in informal settlements. People directly tap electricity by connecting wires directly to the power lines before the meter, bypassing the meter entirely. Some tamper with the meter to record less consumption than used, while others set up unauthorized connections to the power grid, often seen in informal settlements.

3.2 Reaching the poor and the disadvantaged: The government strategy

In Nepal, multiple organizations can be engaged in electrification. The primary responsibility of extending the grid, reaching new households and maintaining the electricity infrastructure lies with the utility, NEA. At the same time, local governments have the mandate to support the disadvantaged communities who are unable to afford the connection costs.

This is done by the local governments identifying and recommending such ultra-poor or bipanna households, as they are called in Nepal, to NEA, who provides them with free meters. In this arrangement, NEA extends the grid to such households and provides them with free meters, and the households must arrange and pay for internal wiring and purchase the

necessary appliances. In some cases, the local governments also help the landless households with additional support for the additional security deposit or dharauti that the landless are required to pay.

The Electricity Distribution Bylaw 2069 and its successor, Bylaw 2078, allow for electrification of households residing on unauthorized public land, based on recommendation from the local government. Despite this, some clusters continue to remain unelectrified, as these provisions are not widely known or consistently implemented.

These interconnected issues highlight the need for stronger coordination between NEA and local governments, improved public awareness, and enhanced infrastructure investment to ensure inclusive, affordable, and reliable electricity access for all residents of Madhesh Province.

3.3 The approach applied in TA 6526 NEP

To address the persistent challenges in electrifying unelectrified households and upgrading infrastructure in Madhesh Province, the TA team worked closely with NEA and the South Asia Subregional Economic Cooperation (SASEC) team. The approach focused on mitigating bottlenecks faced by both communities and implementing agencies through a multi-pronged strategy:



1. Engaging with the utility to identify bottlenecks

- Collaborated with NEA to understand the specific challenges in reaching the poorest and most disadvantaged communities.
- Assessed institutional and procedural barriers that hinder electricity access for disadvantaged groups.



2. Facilitating electricity access for unelectrified households and clusters

- **Mapping and field surveys:** In partnership with NEA and local governments, mapped unelectrified clusters and conducted in-depth field surveys to identify reasons for lack of access.
- **Community support:** Assisted poor households in navigating the electrification process by:
 - » Educating them on procedures and requirements
 - » Helping prepare documentation and filling out necessary forms
 - » Supporting fee and deposit payments at banks
 - » Following up with local Distribution Centers (DCSs)
- **Connection Facilitation:** Coordinated with DCSs, municipalities, and ward offices to help households access free meters.



3. Supporting newly electrified households in safe and efficient electricity use

- **In partnership with NEA, conducted awareness campaigns in newly electrified areas covering:**
 - » Safe, efficient, and productive use of electricity
 - » Risks and consequences of electricity theft
 - » Importance of quality wiring and energy-efficient appliances
 - » Understanding electricity bills and tariff structures
 - » Promoting digital payment methods
- Used diverse communication tools such as street dramas, promotional leaflets, public service announcements (PSAs), community and family discussions and school events.
- Provided support for internal wiring to ultra-poor households.



4. Facilitating infrastructure upgradation in project clusters

- **Needs assessment:** Mapped and surveyed areas requiring system upgradation.
- **Stakeholder coordination:** Facilitated collaboration among NEA, SASEC, DCSs, road departments, municipalities, and district administration offices to resolve:
 - » Right-of-way issues
 - » Compensation disputes
 - » Site clearance for grid extension or line upgrades
 - » Electricity access for irrigation facilities
- **Advocacy:** Engaged with NEA DCSs to promote grid expansion and infrastructure improvements in underserved areas.

An intentional and facilitated process to last mile electrification includes a systematic mapping of unelectrified clusters and households; hand-holding support and assistance in documentation, form-filling and navigating the application process; coordination with local offices to mitigate cost challenges; and educating the new electricity users on productive use, and safe and efficient use of electricity

Achievements of the TA project:

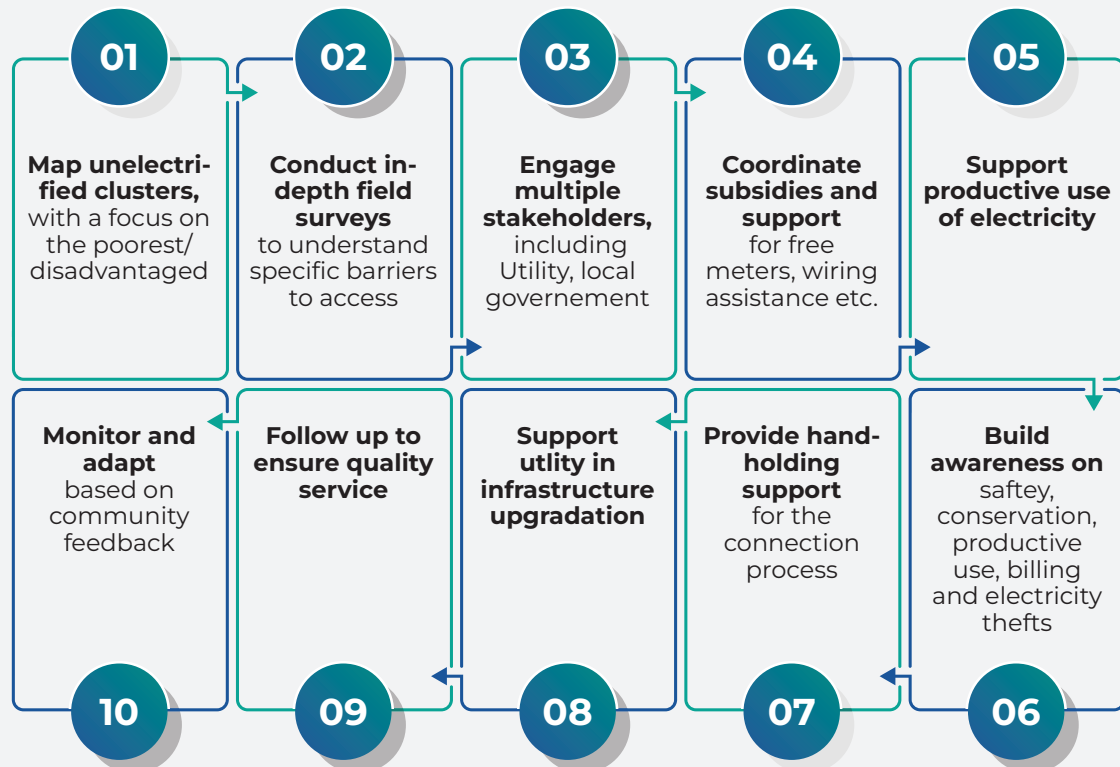
- 5,454 poor and unelectrified households mapped
- 1,300 disadvantaged households electrified through NEA's free meter scheme
- 4,100 households benefited from infrastructure upgradation
- Documentation prepared for 1,512 households for availing free meters
- Door-to-door awareness sessions on safe and efficient electricity use held for 482 newly electrified households along with support on internal wiring

3.4 How the TA approach is different: key differentiators

OVERALL FOCUS	TRADITIONAL APPROACH	GESI-RESPONSIVE LAST MILE APPROACH APPLIED BY TA
Primary focus	Infrastructure upgradation and grid extension	Ensuring that all, including the poor and disadvantaged are able to access electricity and use it meaningfully
Responsibility	Utility-led	Multi-stakeholder coordination between Utility (NEA/DCSs) and local government/municipalities
Electrification process	Standard procedures	An intentional and facilitated process
Target group	General population (whoever is interested in getting a connection is free to apply)	Explicitly prioritizes ultra-poor households, landless communities and squatters, disadvantaged groups such as Dalits, women-headed households and those lacking documentation
Identification of unelectrified households	Based on local government recommendations and NEA's internal data	Field-level mapping and surveys in unelectrified clusters with NEA and local governments to identify unelectrified clusters and understand root causes
Recognizing barriers	Understood as mainly technical and geographical	Multi-dimensional barriers, including economic (cost of connection, tariff payment), social (documentation, citizenship, landlessness), awareness (lack of information on process, billing, risks of stealing electricity), institutional (coordination gaps) and cultural (fear of approaching the utility, decision making)
Support to Households	NEA provides free meters to recommended ultra-poor households; households arrange wiring and appliances	Hand-holding support and assistance with documentation, form-filling, bank deposits, liaising with DCSs and municipalities for additional support
Awareness and communication	Minimal/ one-time information sharing	Comprehensive, ongoing awareness on electrical safety, energy conservation, preventing electricity theft, understanding bills and tariffs, digital payment methods and productive use opportunities
Awareness and communication approaches	Standard (announcements/posters)	Multi-channel, culturally appropriate and local language door-to-door campaigns by community champions; street dramas (particularly effective for sensitive topics like theft; school events; family discussion; radio and local media
Success metrics	Number of connections made, number of kms of extension	Ultra-poor households connected, proportion of these receiving free metes, quality and reliability of electricity, actual use including productive use of electricity, reduction in electricity

3.5 Scalable Lessons and Recommendations from TA 6526 NEP

FIGURE 2. GESI-RESPONSIVE LAST MILE ELECTRIFICATION PROCESS FLOW



Lessons for practitioners: A summary

- **Hands on facilitation** is necessary to help poor households overcome procedural and financial barriers.
- **Intentional targeting** of the disadvantaged is necessary. Community-centred mapping helps to reach the un-electrified.
- **Coordination** between different players, including municipalities, district offices, and communities, is necessary to resolve bottlenecks and drive last mile electricity access.
- **Awareness campaigns are non negotiable.** Culturally relevant tools build trust and tackle safety, theft, and billing issues.
- **Link to productive use of energy.** Households require guidance on wiring, efficiency, and using electricity for livelihoods.

3.5.1 Technical solutions are not enough to reach the poor unelectrified communities. Hands-on support for disadvantaged households significantly improves access.

LESSON

The vast majority of unelectrified households face non-technical barriers, poverty, procedural ignorance, absence of proper documentation with the household, and hesitancy and fear of high electricity bills. A great deal of facilitation and direct assistance with documentation, form-filling, bank deposits, and navigating bureaucratic processes significantly improves access for disadvantaged groups who would otherwise remain unelectrified due to procedural barriers rather than technical ones.

RECOMMENDATIONS

- Establish dedicated facilitation teams or appoint local facilitators to provide hands-on support to poor and disadvantaged households.
- Train these facilitators on NEA procedures, documentation requirements, tariff structures, and payment systems. Ensure facilitators can communicate in local languages and understand local cultural contexts.
- This support should include assistance with documentation, form-filling, understanding procedures, navigating bureaucratic processes, and addressing fears about electricity costs.
- Allocate sufficient resources and time for this intensive support work.

3.5.2 Intentional targeting of the disadvantaged is necessary. Community-centered mapping and data collection provide accurate insights.

LESSON

Field-level mapping and household surveys provide accurate, localized insights into electrification gaps and barriers that are not captured in utility databases or local government records alone.

RECOMMENDATIONS

- Institutionalize participatory mapping exercises in all provinces to identify unelectrified clusters and inform planning.
- Dedicated and trained utility staff and local government officials can conduct community-level surveys.
- Integrate this field-level data into the utility's planning and monitoring systems.

3.5.3 Reaching the last mile requires systematic coordination between utilities, municipalities, political leaders, district administration, and community representatives. The Utility is best positioned to play the facilitator role.

LESSON

In Nepal, along with NEA, stakeholders like local governments, political leaders and community representatives, can potentially play a role in reaching electricity to the poor and the disadvantaged. Systematic coordination is needed between the DCSs, the municipalities, and the District Administration offices to resolve problems of right-of-way issues, compensation disputes, site clearance for new grid extension or line upgradation, and extending electricity for irrigation facilities. During the TA project implementation, the team took the lead in facilitating discussions between relevant government departments to iron out such issues. However, in the long run, it is NEA that will have to be equipped with such skills internally.

RECOMMENDATIONS

- Establish local-level coordination platforms or committees with representation from NEA DCSs, municipalities, ward offices, district administration, and community representatives. Define clear roles and responsibilities for each stakeholder.
- Build capacity within NEA for facilitation and coordination skills, not just technical skills. These “soft skills” include conducting surveys and mapping, coordination skills to bring stakeholders together, and conducting community-level awareness programs.

3.5.4 Awareness campaigns are non-negotiable. All electricity expansion initiatives must be accompanied with awareness and communication campaigns on electricity.

LESSON

Working in Madhesh Province brought to the fore multiple areas in which the communities need to have their awareness built: these range from electrical safety and conservation, electricity theft and the possibilities of productive use of energy, understanding electricity bills and tariff structure, and alternative/digital methods of payment. The TA experimented with several approaches to raise awareness on electricity, including mass awareness tools like radio, innovative media and

The street dramas proved to be a very effective medium to engage illiterate communities and drew large crowds, at times up to 500 people. Both women and men were keenly interested, however in some Muslim villages, the women watched from a short distance. Most street drama performance had the participation of the DCS staff and DCS Chief, who were able to resolve doubts and issues faced by the community through a discussion at the end of the performance.

targeted community events. The street dramas were particularly effective in raising awareness on critical issues, especially that of electricity thefts, or “hooking”, as it is popularly called. Community champions, including women from Muslim and Dalit communities, drawn from disadvantaged groups, played a critical role by conducting door-to-door visits, organizing family discussions, and offering language support. Their efforts broke down cultural barriers, encouraged women’s participation, and built trust within the community, leading to increased confidence and involvement of women in public activities. Events with school children were also an effective entry point to raise awareness among the younger generation.



Women watching street drama at Matiarwa vegetable market, Kalaiya

RECOMMENDATIONS

- Develop context-specific communication toolkits and campaigns using local languages and culturally relevant formats. Use a combination of street dramas, radio programs, school events, door-to-door campaigns, and community discussions.
- Train and deploy community champions from disadvantaged groups, especially women, to conduct awareness activities.
- Conduct awareness campaigns regularly, not just as one-time events.
- Cover topics including electrical safety, conservation, productive use of energy, theft prevention, bill understanding, tariff structures, and digital payment methods.

3.5.5 Leveraging existing policy provisions can accelerate access.

LESSON

Provisions in the Electricity Distribution Bylaws (e.g., electrification of households on unauthorized public land) are underutilized due to limited awareness among both communities and implementing agencies.

RECOMMENDATIONS

- Conduct targeted awareness and training sessions for DCS staff, local government officials, and communities on policy entitlements and provisions.
- Ensure that the local utility offices have clear standard operating procedures for implementing these policy provisions.
- Develop simplified guides in local languages explaining eligibility criteria and application processes.

3.5.6 Supporting safe and productive use of electricity is essential.

LESSON

Electrification alone is not enough: households need guidance on how to use electricity safely, efficiently, and productively. The ultra-poor lack awareness and resources for proper internal wiring and safe electricity use.

RECOMMENDATIONS

- Integrate programs that promote energy-efficient appliances, safe wiring standards, and productive uses of electricity.
- For ultra-poor households receiving free meters, provide additional support for quality internal wiring.
- Develop simple educational materials on electrical safety that can be understood by low-literacy populations.

3.6 Conclusion

The TA approach in Madhesh Province demonstrates that inclusive electrification is achievable through community engagement, institutional coordination, and targeted support. Reaching the last mile requires going beyond grid extension to address the social, economic, and informational barriers that keep poor and disadvantaged communities in darkness. Scaling these lessons can help countries close existing energy access gaps and ensure reliable, equitable electricity for all.



Group discussion on electrical safety

04

The power within: Institutionalizing GESI within Electric Utilities

4.1 Problem statement

In 2020, the NEA Board endorsed the GESI Strategy and Operational Guidelines 2020. This foundational document provides the necessary framework and directives for implementing GESI initiatives within NEA. However, translating this strategy into operational reality requires systematic capacity building, institutional structures, and organizational culture change.

The challenge lies in moving from policy on paper to practice on the ground. This means ensuring that GESI principles are embedded in NEA's day-to-day operations, decision-making processes, budget allocation, service delivery, accountability mechanisms, and workplace culture. This requires building awareness and ownership across all levels of the organization, establishing clear implementation mechanisms, and demonstrating the value of GESI-responsive approaches through concrete results.

4.2 The approach applied in TA 6526 NEP

In order to support NEA to operationalize its GESI Strategy and Operational Guidelines, the following activities were undertaken:



Establishment of an institutional architecture to mainstream GESI within NEA

- GESI core teams were established with defined roles across NEA directorates
- Clear hierarchy and reporting mechanisms were established to oversee the strategy's implementation
- A step-by-step implementation manual was developed, including detailed procedures and actions required to operationalize the GESI strategy with responsibilities, timelines and specific activities



Capacity building of NEA GESI Focal Persons

- The GESI core team was familiarized with the GESI Strategy and Operational Guidelines, and how these are to be used within the organization
- Good practices on how GESI principles are adopted in other utilities were shared

- For the GESI focal persons, training skills were upgraded, based on which they conducted further GESI trainings independently



Staff orientation on GESI strategy, guidelines and manual

- 556 NEA personnel were oriented on the fundamentals of GESI
- The training covered GESI principles, practical implementation strategies as well as measures to facilitate organizational change
- Additionally, empowerment, team building and leadership were included



Development of GESI curriculum for NEA

- To support NEA's GESI agenda in the long run, a standardized GESI curriculum on GESI integration has been developed for the NEA Training Centre
- Modules customized for Administration, Distribution and Consumer Services, and Projects
- Manual ensures consistent GESI training across all NEA facilities and directorates



Improving work conditions for women within NEA

- Technical assistance to develop Code of Conduct for SEAH (Sexual Exploitation, Abuse & Harassment) prevention to ensure the safety and well-being of NEA employees, with a particular focus on protecting women and disadvantaged groups
- Clear reporting mechanisms and support systems established
- Fostering a GESI-friendly workplace including SEAH prevention measures, and provisions for separate toilets and childcare centres



Mainstreaming GESI in Pilot DCSs in Madhesh Province

- GESI pilots in Distribution Centers (Madhesh Province) implemented
- Focus areas included:
 - » Inclusive customer service
 - » Leadership training for female staff
 - » Measures to support inclusive workforce participation
- Pilots demonstrated practical application of GESI principles in operational settings

Achievements of the TA project:

- **GESI core teams established** across NEA directorates with defined roles and responsibilities
- **556 NEA personnel trained** on GESI fundamentals, implementation strategies, and organizational change
- **101 NEA staff from different directorates trained** by the GESI focal persons
- **Standardized GESI training curriculum developed** with customized modules for different departments
- **Code of Conduct for SEAH prevention developed** to ensure safe workplace for all employees
- **GESI pilots implemented** in Distribution Centers in Madhesh Province demonstrating practical application

Commitments on GESI made within NEA

- Directive issued by the Central Office with provision of appropriate amenities and separate toilets for women in all offices.
- Directive issued by the Central Office to establish Child Care Units in all offices.
- Directive issued for installation for appropriate infrastructure and amenities for consumers in the counter area (DCSs) by the management.
- Human Resources data to be maintained in desegregated form (by gender and ethnicity) and taken up by the Administration Directorate as well as in Lalbandi.
- Targeted efforts to be made in identifying last mile households without electricity and develop measures for enabling access to electricity (DCSs).
- Enhance use of digital payment system.
- Formulation of measures by the Administration Directorate of NEA for operationalising Childcare provisions at the Central and Provincial offices.
- Adoption of a Code of Conduct for SEAH prevention and issuance of guidelines for childcare centres.

4.3 How the TA approach is different: Key differentiators

ASPECT	TRADITIONAL APPROACH TO GESI INSTITUTIONALISATION IN UTILITIES	THE APPROACH APPLIED BY TA 6526 NEP
Policy commitment	No demonstrated policy commitment to gender	Specialized GESI Strategy and Operational Guidelines (2020) with step-by-step implementation manual including procedures, timelines, and responsibilities
Organizational structure	No dedicated GESI structure. At best, a gender focal point appointed.	Established GESI Focal persons in directorates with specific roles
Staff capacities	Utility staff are specialists trained largely on technical and other subject matters	Comprehensive GESI training provided to over 500 staff members, on GESI principles, implementation strategies, organizational change, empowerment, team building, and leadership
Training infrastructure	Standard technical training modules	Standardized GESI training curriculum with customized modules for Administration, Distribution and Consumer Services, and Projects
Workplace policies	Standard workplace policies aligned with national policies	Code of Conduct for SEAH (Sexual Exploitation, Abuse & Harassment) prevention focusing on protecting women and disadvantaged groups
Demonstration and pilots	No specific pilots on GESI institutionalization	GESI pilots in Distribution Centers to demonstrate inclusive customer service, leadership training for female staff, measures for inclusive workforce participation
Senior management engagement	Limited and tokenistic engagement	Active engagement through regular updates and exposure to good GESI practices to build support and commitment

Lessons for practitioners: A summary

- **Adopt a multi pronged approach**, that combines capacity building, pilots, senior management engagement, workplace initiatives, and inclusive policies.
- **Build internal capacity**, by training a cadre of GESI focal persons and integrate standardized modules into all staff programs.
- **Demonstrate the practical value** of GESI, through ground level pilots that show tangible benefits.
- **Secure senior management commitment**, through regular reporting, exposure visits, and integration into strategic planning ensure sustained support.
- **Ensure workplace safety & inclusion**, through policies on harassment, discrimination, and inclusion create a culture where all staff can thrive.
- **Plan for sustained culture change**, through multi year timelines, refresher training, monitoring, and recognition embed GESI into organizational DNA.

4.4 Scalable lessons and recommendations

4.4.1 The process of institutionalizing GESI within electric utilities calls for a multi-pronged process.

LESSON

Successful GESI mainstreaming cannot rely on a single intervention. Successful GESI mainstreaming requires:

- Building a trained cohort of GESI focal persons exposed to international best practices
- Demonstrating efficacy through ground-level pilots
- Engaging senior management with regular updates and exposure visits
- Creating organizational systems for workplace safety and professional growth
- Engaging men as equal partners in the process
- Highlighting GESI achievements in important documents like annual reports
- Integrating GESI indicators into organizational performance monitoring systems

RECOMMENDATIONS

- Adopt a multi-pronged institutional GESI strategy that combines capacity building, practical demonstrations, senior management engagement, policy development, and inclusive workplace initiatives.
- Ensure GESI focal persons receive ongoing support and resources.
- Allocate sufficient budget and time (minimum 3-5 years) for organizational culture change.
- Include men as active participants and champions in GESI initiatives, not just as audiences.
- Ensure that GESI successes receive visibility.

4.4.2 Building internal capacity is essential for sustainability.

LESSON

For GESI mainstreaming to be sustainable, the organization must develop internal capacity to carry forward the agenda. This includes training a core team that can then train others, developing standardized training materials, and integrating GESI into existing training programs.

RECOMMENDATIONS

- Invest in developing a cadre of internal GESI trainers and facilitators.
- Develop standardized, institutionalized training materials and integrate GESI modules into all staff orientation and training programs.
- Ensure that the organization is equipped with GESI materials, tools, and expertise accessible to all staff.

4.4.3 Demonstrating the practical value of adopting GESI builds organizational buy-in.

LESSON

Ground-level demonstrations of GESI-responsive approaches in Madhesh Province helped build organizational buy-in by showing concrete results: improved customer satisfaction, better reach to disadvantaged communities, and enhanced service delivery. Seeing practical outcomes is more convincing than policy documents alone.

RECOMMENDATIONS

- Implement GESI pilots in selected operational units before organization-wide rollout. Document and widely share success stories, case studies, and quantitative impacts.
- Use field visits and exposure programs to help staff and management see GESI benefits firsthand.

4.4.4 Senior management commitment is critical.**LESSON**

While grassroots implementation is important, senior management commitment determines whether GESI initiatives receive adequate resources, policy support, and organizational priority. Regular engagement with senior management through updates, exposure to good practices, and demonstration of results helps maintain this commitment.

RECOMMENDATIONS

- Establish regular mechanisms for GESI reporting to senior management and board level.
- Create opportunities for senior management to visit field sites and interact with beneficiaries of GESI initiatives.
- Ensure GESI considerations are integrated into strategic planning and budgeting processes.

4.4.5 Workplace safety and inclusion are foundational.**LESSON**

Creating a safe, inclusive workplace is fundamental to attracting, retaining, and empowering women and disadvantaged groups in utilities. The development and endorsement of a code of conduct for preventing SEAH to address workplace issues is not just about compliance but about creating an organizational culture where all employees can thrive.

RECOMMENDATIONS

- Develop and adopt comprehensive workplace policies addressing sexual harassment, discrimination, and inclusion, including clear protocols for investigation and redressal.
- Provide regular training on these policies to all staff.
- Monitor and report on workplace climate indicators regularly.

4.4.6 Sustained engagement and iteration are necessary for culture change.

LESSON

Organizational culture change is a long-term process that requires sustained engagement, not one-time interventions. Regular training, ongoing support to GESI focal persons, continuous monitoring and feedback, and iterative improvements are all essential.

RECOMMENDATIONS

- Plan for multi-year GESI mainstreaming timelines with phased objectives.
- Conduct regular refresher training and update materials based on learning. Establish annual GESI reviews to assess progress and adjust strategies.
- Recognize and reward units and individuals demonstrating GESI leadership.

4.5 Conclusion

Institutionalizing GESI within electric utilities is a complex but achievable process that requires systematic capacity building, practical demonstration, organizational system changes, and sustained commitment. The TA experience with NEA shows that utilities can successfully embed GESI principles in their operations when provided with appropriate technical support, clear implementation frameworks, and opportunities to see the practical value of GESI-responsive approaches. The lessons learned provide a roadmap for other utilities seeking to become more inclusive, equitable organizations that extend equitable services to all their customers.



A young girl taking lead in discussion on electrical safety

05

Final Insights: Shaping GESI-Responsive Electrification Programs

Over the last four years, the TA team drove a series of initiatives to assist NEA to operationalize a GESI agenda into its organizational systems and operations. This experience proved that with intentional design, adequate resources and strong commitment, electrification becomes a powerful catalyst for inclusive local development, empowering women and delivering transformational change for the poorest and most disadvantaged communities. In order to unlock the full potential of electrification, multiple programmatic elements need to come together, creating an integrated approach that goes beyond infrastructure to address social, economic, and institutional dimensions of energy access and contribute to inclusive local development (see figure below).

PROGRAM ELEMENTS CONTRIBUTING TO INCLUSIVE LOCAL DEVELOPMENT

Engage local institutions in electrification and in enterprise development by raising their awareness and building their capacity

Facilitate coordination between key stakeholders to work together on electrification, enterprise development and electric cooking promotion

Raise awareness within communities on productive use of energy and provide technical support as well as concessional loans and startup funds for those who wish to engage into such activities



**STRENGTHEN LOCAL
ECONOMY**

Build entrepreneurial capabilities to enhance their productivity and income

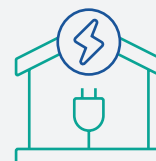
Build agency and empowerment through income increase, mentoring and exposure



**EMPOWER WOMEN
AND DISADVANTAGED
COMMUNITIES**

Assist the poorest to gain access to electricity through information and handholding support

Build awareness on the risks and dangers of electricity theft and on productive use of energy, electrical safety and conservation



**ENABLE ELECTRICITY
ACCESS FOR THE
POOREST COMMUNITIES**

TA projects such as TA 6526 NEP have a meaningful role in amplifying the impacts of electricity access through targeted efforts to reach the last mile; focusing on productive use of energy and promoting electric cooking, all of which are an excellent fit for electrification projects. Some recommendations for future such programs are discussed in the following section.

5.1 Building GESI-responsive electrification programs: way forward

Electrification interventions must address both technical and social barriers.

Providing electricity infrastructure is only one part of the energy access solution. Training programs, awareness campaigns, and support for empowering the women and disadvantaged are equally important to ensure that electricity translates into empowerment. The TA project showed that when electrification is combined with livelihood support and gender training, the outcomes become more sustainable and equitable³.

All electrification projects should include GESI objectives, targets and interventions in their project design, and supported by adequate budgets to ensure meaningful implementation. technical and social barriers.

All electrification projects should include clear GESI objectives and targets, supported with adequate budgets and clear accountability mechanisms. “Soft” inputs like those provided through TA 6526 NEP project—such as local coordination, capacity building, skill training support, awareness raising—provide huge gains and enhance the quality and effectiveness of electrification programs visibly. However, these require sufficient investments and resources such as time and resources (human and financial). Future electrification projects should budget adequately for these functions from the design stage.

In addition to implementing activities on the ground, a critical component of TA projects like these must be the institutionalization of such processes with partner organizations and utilities, such as the Nepal Electricity Authority, and the integration of GESI approaches and strategies in energy sector policies and plans.

TA-type functions need to be integrated within utilities. objectives, targets and interventions in their project design, and supported by adequate budgets to ensure meaningful implementation. technical and social barriers.

For sustainability, utilities must have the mandate, budget and expertise for these activities and set aside dedicated staff and resources. This includes allocating resources for:

- Community facilitation and coordination functions
- Awareness and communication campaigns

³ As articulated in Kemp, Saskia, 2025. Measuring the impact of electrification on women's empowerment and quality of life: implementing an SPT-CA framework on a case study in Nepal. Final Master Thesis, October 2025. Eindhoven University of technology.

- Support services for poor and disadvantaged households
- Monitoring and feedback mechanisms
- Staff capacity building on GESI and soft skills

Future electrification projects must include last mile electrification and productive use of electricity. technical and social barriers.

Madhesh Province has already achieved over 99% electrification. The households and communities that are still left behind are the poorest and unless special efforts are made, they will continue to be left out. The TA project has shown that the final unelectrified communities and households can be reached if sufficient resources are set aside. Identifying these communities and households and understanding the reason why they have not yet been electrified is the first step to be taken. Future programs should integrate productive use of electricity and awareness building along with grid extension and upgradation.

Ensure adequate timelines and resources. last mile electrification and productive use of electricity. technical and social barriers.

GESI-responsive programming requires longer project timelines (minimum 4-5 years) to allow for capacity building, behavioural change, and enterprise development. This must be accompanied with adequate budgets for soft activities (minimum 20-30% of project costs); flexibility to adapt approaches based on learning and dedicated staff with GESI expertise and community engagement skills.

Build sustainability through local institutions. electrification and productive use of electricity. technical and social barriers.

Electrification efforts should:

- Identify and strengthen existing local institutions rather than creating parallel structures
- Build capacity of local government, cooperatives, women's groups, and community organizations
- Embed successful approaches in local government plans and budgets
- Create mechanisms for ongoing coordination among stakeholders

Lessons learned and experiences gained under TA 6526 should be widely shared. electrification and productive use of electricity. technical and social barriers.

Other organizations, governments and projects, both within Nepal and beyond, can benefit from these lessons and experiences. This could be done through detailed case studies and toolkits, facilitating knowledge platforms for peer learning and publishing in accessible formats and languages, which are accessible for local institutions as well.

5.2 Conclusion

The TA 6526 NEP shows that when electrification is GESI-responsive, it does more than just lighting homes, it has the capacity to power livelihoods, empower women and the disadvantaged and bring about inclusive development. The project demonstrates that embedding Gender Equality and Social Inclusion in electrification efforts leads to more inclusive and sustainable energy access outcomes. Addressing social norms, financial barriers, and capacity gaps empowers disadvantaged groups, particularly women and youth, enhancing their agency and socio-economic status.

The TA project contributed to the Government of Nepal's goal of "energy for all", supporting the electrification efforts in poor and excluded areas. It improved the lives of many living in the Madhesh Province by giving access to electricity, by increasing awareness on safe electricity usage, by lighting up the streets, supporting income-generating activities, creating jobs, and improving collaboration between different stakeholders. The lessons outlined here provide a roadmap for replicating and scaling GESI-responsive energy initiatives within Nepal, the region and globally.

