



Executive Summary



Multidimensional Energy
Poverty Index

We Are Energy that
Drives Development

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Road to Zero Energy Poverty

Multidimensional Energy Poverty Index

Without energy, no development is possible. Energy, in its many forms, is an enabler of human well-being. Homes need energy to be functional and comfortable, so that the people who live in them can study, work, eat, rest, prepare for life at work or study outside. Classrooms need energy to make learning possible inside them, to turn on the light bulbs, the internet connection, computers, televisions, and other media that enrich learning and allow people to connect and learn in a globalized world. Companies need energy to produce and bring prosperity to society. People need energy to turn on their technological devices and thus learn, make economic transactions, and socialize, enabling the vehicles wherein they are transported to move. Health institutions need energy so that diagnostic and treatment equipment can operate. **Energy is inherent to human development.**

With this report, Promigas aims to contribute to the analysis of the scenario of living conditions in Colombia and their relation to energy, propose an index of energy poverty and highlight Promigas' contribution to this problem based on its Social Footprint.

To begin with, Chapter 1 of the report exposes the empirical relationship between development and access to energy sources, quality and devices that transform it into well-being, while reviewing regional and population patterns of access or tenure.

This overall picture of the energy landscape in Colombia reveals that, to date, **in Colombia we have achieved one of the best energy access coverage in the region:**

 **97%**
Electric power

 **70%**
Natural gas

Sixty years ago, most Colombians did not have access to electricity or an appropriate energy source for cooking. Today, the majority of households have these services. However, significant challenges remain:

¹ In the theoretical framework proposed in this document, which is based on Amartya Sen's capabilities approach, the realizations are the achievements that the person attains by transforming the means (goods and services) into well-being.

ensuring, in addition to access, good quality, an aspect in which there are great inequalities; **to ensure that the 9.7% of the Colombian population that still cooks with firewood will adopt the alternative of an appropriate energy source for cooking** and provide the means for more households and individuals to have access to devices and other means to transform energy into well-being. All this within the framework of the challenge of decarbonization and what we know as the energy transition to a cleaner energy matrix.

Subsequently, we established which realizations are made possible for people thanks to access to appropriate and quality energy sources, including natural gas. This exercise seeks to systematically answer the question: *what is energy for?*¹

We say then that access to appropriate and quality energy sources is an enabler of the possibility of living in a functional, safe, and time-saving dwelling; to learn and communicate with the community and the world; to live in a territory fitted out for well-being and to enjoy a clean and healthy environment. All lists are partial and temporary and this one is no exception, there might be exclusions and it is possible that it could be completed in the future but let us consider that this is a starting point that can be measured and about which we can start to talk.



Promigas: Inclusion SAS based on national population and housing census (DANE). National Survey of Living Standards

MEPI Components



Illustration 1. Four human realizations that make access to an appropriate and quality source of possible.

In this report we follow an understanding appertaining to energy poverty, which is defined as the situation wherein the person or household does not have the possibility to carry out a reasonable set of basic human needs using an appropriate and quality energy source as a means, as opposed to energy deprivation, which refers only to the lack of access to adequate energy or to a lack of economic capacity to pay for it.

From this broad and general look at the relationship between access to appropriate energy sources , well-being, and poverty, we move on to a second stage in the structuring of this report, dedicated specifically to the development of the Multidimensional Energy Poverty Index (hereinafter IMPE or MEPI), an instrument designed to measure energy poverty.

Results of the Multidimensional Energy Poverty Index 2022



Population living in energy poverty.

INTENSITY
46,9%

% of accumulated deprivations of the energy poor

ADJUSTED IMPACT
0,087

Weighed impact by impact

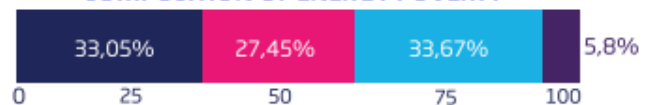
Energy poor 2022

9,6
Million
People

Non-energy poor 2022

42,1
Million
People

COMPOSITION OF ENERGY POVERTY

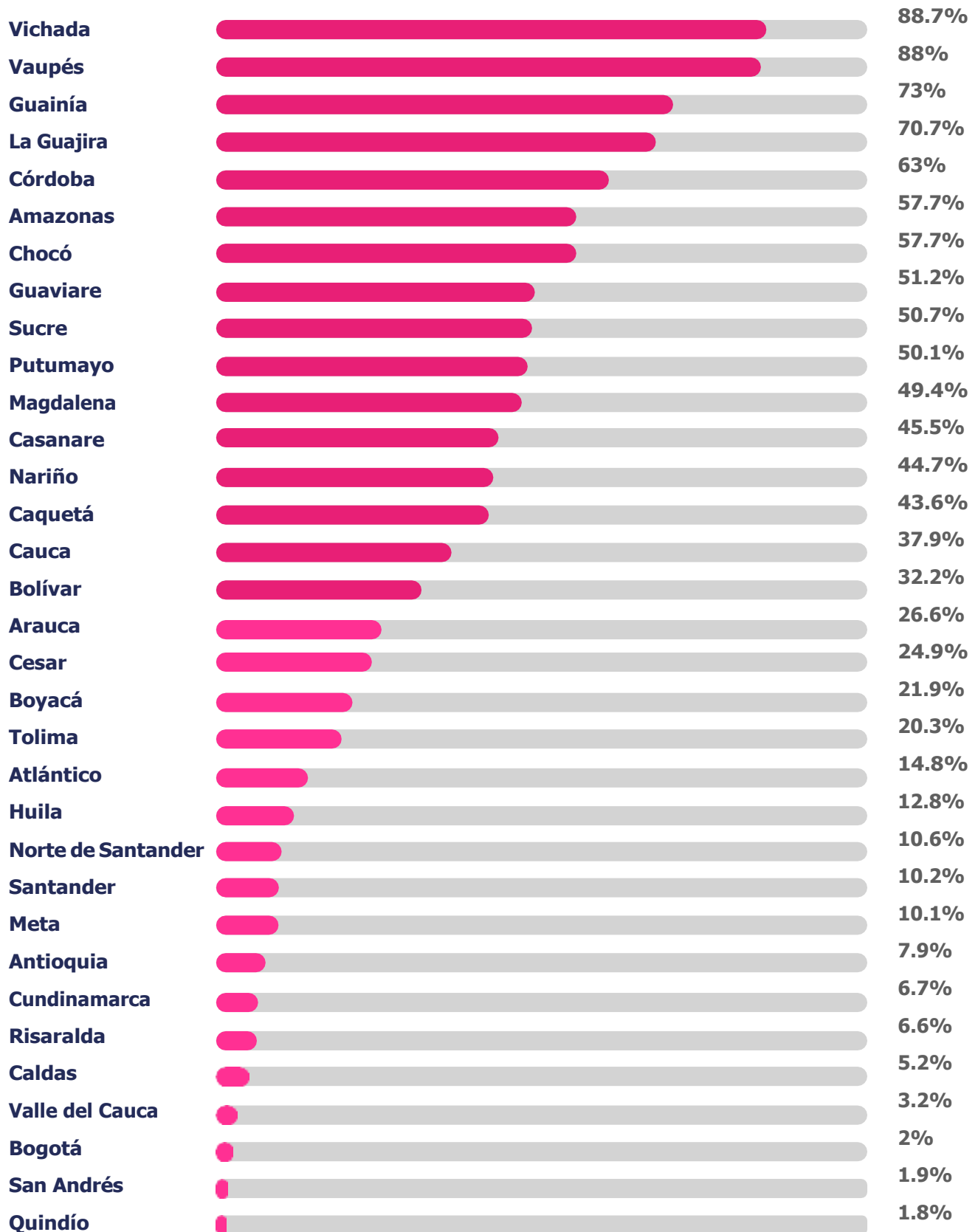


■ Access and quality of energy ■ Functional housing ■ Learning and Communicating ■ Fitted territory



Source: Promigas. Inclusion SAS based on DANE ECV (2022): Formal Education Census (2021). Bank of Opportunities (2021). ICBF (2021) and SUI (2021).

Percentage of energy poverty by department - MEPI (2022)



Source: Promigas. Inclusion SAS based on DANE ECV (2022); Formal Education Census (2021). Bank of Opportunities (2021). ICBF (2021) and SUI (2021).



10 MEPI findings:

1. The MEPI shows that **18.5% of the country's population is in fuel poverty**. Although there are 42.1 million people outside of energy poverty, there are still 9.6 million in this condition.

2. **Energy poverty in remote rural areas is 11 times higher than in large urban centers** (47.9% vs. 4.3%). When considering not only the percentage of people in poverty but also the accumulated deprivation of the population, this ratio becomes 15 times (0.016 vs. 0.230).

3. **The MEPI gaps between departments are larger than those observed according to the degree of urbanization**. While Quindío, San Andrés and Bogotá register energy poverty of around 2%, Vichada, Vaupés, Guainía, and La Guajira show impacts above 70%.

4. MEPI makes visible the challenges still faced by the energy poor in terms of access and quality: **8% do not have electricity, 61.8% live in municipalities with poor energy quality and 47.4% are**

cooking with wood, charcoal, and waste.

5. **The results of the MEPI breakdown outline an agenda for reducing energy poverty in Colombia** which involves a component of access and quality to appropriate energy (electricity and natural gas), a component of other public goods and services (internet connectivity and energy and gas access to social facilities for early childhood care) and a final component of ability to pay for long-lasting goods such as a washing machine, computer, or tablet.

6. While nationally the dimensions that weigh most heavily are learning and communicating (33.7%) and access to appropriate and quality energy (33.1%), the policy agenda suggested by the data is very different from one department to another. For example, in Córdoba the access dimension contributes 42.8% of energy poverty, while in Bogotá it is virtually 0% or in Antioquia it is 16.7%.

7. The fuel poverty reduction strategy should be differentiated by department, while there are some departments that demand a strategy focused on access to adequate and quality energy, in a modality that we could call first generation (e.g. Córdoba, Sucre, Bolívar, La Guajira, Magdalena, Tolima, Casanare and Caquetá); the others would enter into second and third generation strategies according to the importance of the other dimensions that focus on devices to transform energy into well-being or equipment for the territory.

8. Households in fuel poverty that have access to natural gas are closer to getting out of poverty than those that do not. This is not only because it is a more suitable energy source than firewood, coal, and waste, but also because access to it is associated with having a stove and heater.

9. There are important energy poverty gaps according to population groups. Fuel poverty is higher for households that self-identify as part of an ethnic group (65.8%) and for households with children and adolescents (19.9%).

10. MEPI identifies households not included in the official monetary poverty and multidimensional poverty indices. Thus, out of the 9.6 million energy poor, 3.4 million are poor according to the Multidimensional Poverty Index (MPI) and 6.2 million are not. In addition, a total of 3.5 million people are not income poor, but energy poor; and 14.6 million people are monetary poor, but not energy poor.

Finally, in Chapter 3, this report sought to measure Promigas' Social Footprint within its area of influence, through the operation of the natural gas and electric power value chain, the Brilla consumer credit initiative for durable goods, and social investment, which includes the Promigas Foundation.

68% of this company's natural gas service users are located in the lowest socioeconomic levels (strata 1 and 2), which allows for savings in current expenses and frees up time for unpaid activities among the most vulnerable population, benefiting proportionally more women and children in the household. In addition, through Brilla, there are **775,000 active customers with credit for access to goods and services that allow transforming energy into well-being**, education loans, housing materials, household appliances, computers, inter alia. **High-impact social investment has led to comprehensive improvements in the labor and productive inclusion of more than 9,600 beneficiaries.** In addition, the company is gearing up to make an active contribution to the energy transition in



an orderly and sustainable manner through its decarbonization route and the training of its workforce and suppliers in clean energy.

The Social Footprint of Promigas

Intervention area

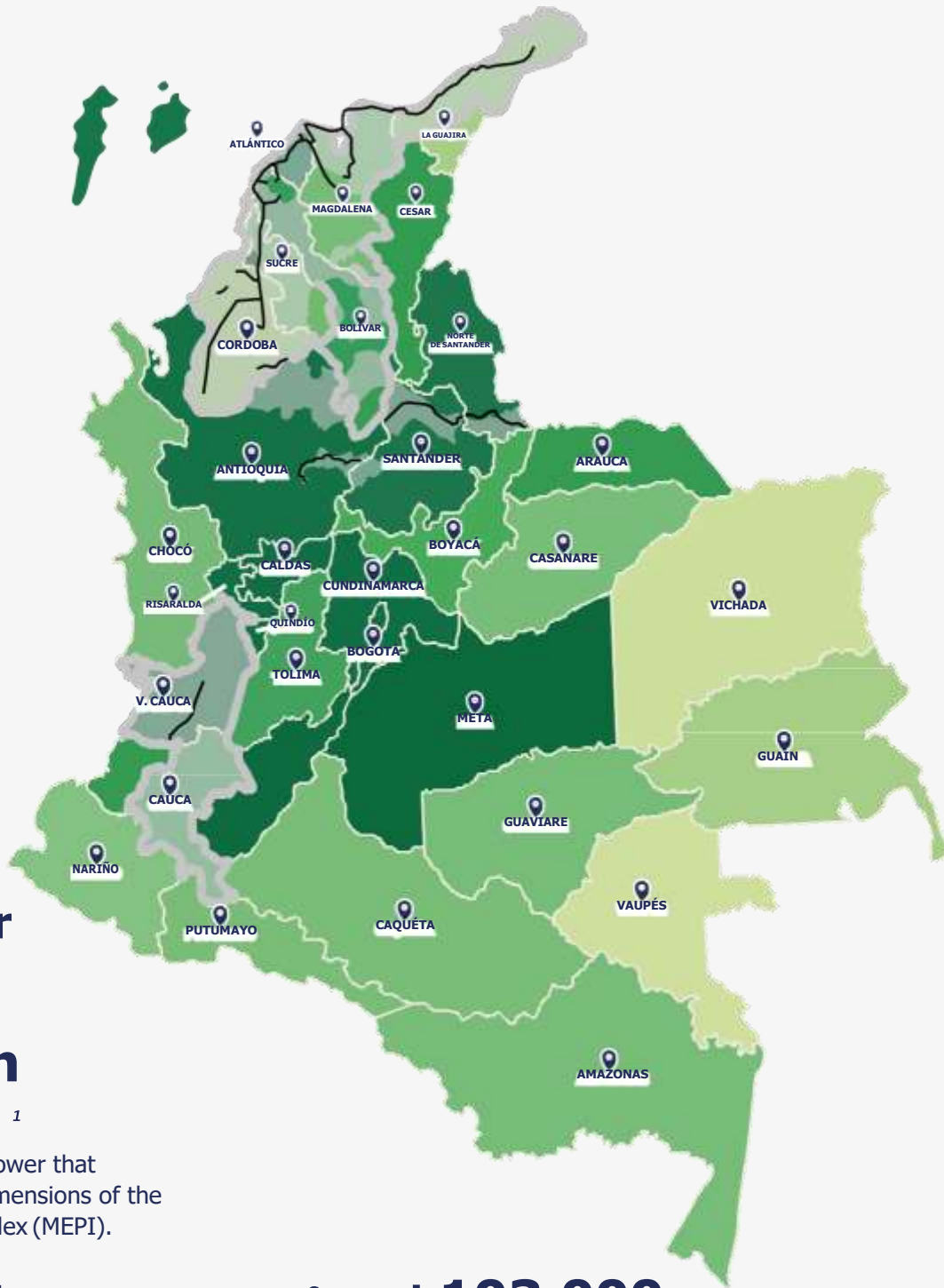


MULTIDIMENSIONAL ENERGY POVERTY INDEX - 2022

- Pipeline Infrastructure Limit
- - Promigas

NO POVERTY IMPACT

- 11,3% - 20%
- 20,1% - 40%
- 40.1% - 60%
- 60.1% - 80%
- 80.1% - 98.2%



3 Figures about our Social footprint



4.5 million

Natural Gas and Electric Power Users in Colombia ¹

Access to natural gas and electric power that enables human realizations of all dimensions of the multidimensional energy poverty index (MEPI).



\$1.02 billion

Through +475,000 Brilla credits

Enables the consumption of goods and services that allow to improve housing, to have access to devices for a dignified and time-saving housing and to learn and communicate.



+103.000

Beneficiaries of social investment in Colombia. With the social investment in Peru, the beneficiaries amount to +184,000.

Improves the quality of life of the communities in Promigas' area of influence in the dimension of productive inclusion, with emphasis on young people, and contributes to achieving sustainable territories.

Source: Promigas: SAS inclusion based on DANE ECV (2022). Formal Education Census (2021). Opportunity Banking (2021). ICBF (2022) and SUI (2021)

¹ Total users of our energy and natural gas services in Colombia and Peru amounted to 6.3 million in 2022.

IMPE

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Download the
report here.




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