REPORT 2022

ENERGY COOPERATIVES IN BRAZIL

Research report with Distributed Generation Energy Cooperatives in Brazil conducted in 2022

AN INNITIATIVE BY

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In partnership with:

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SUMMARY

INTRODUCTION

WHAT IS AN ENERGY COOPERATIVE ?

Energy Cooperative Initiatives are formed by groups of people who cooperate together with a common goal: to mitigate climate change through active participation towards the energy transition.

From the Normative Resolution (REN) 687/2015, which was a revision of REN 482/2012 (regulation that allowed the net metering scheme in Brazil in 2012 for distributed generation), new modalities were allowed: condominiums, consortia and cooperatives.

In 2022, the distributed generation market went through another important milestone, with the 14,300 Law, which provides greater regulation and stability for the coming years. The 14,300 Law also brought other possibilities of legal structure for energy cooperative initiatives: building condominiums, voluntary civil condominiums and civil associations.

Energy Cooperative Initiatives have people leading the generation of clean and renewable energy, being part of the growth of distributed generation and can represent a relevant part in the energy transition process in the country.

Find out more on the Energia.coop website

INTRODUCTION

ENERGIA.COOP

Energia.coop is a collaborative platform launched in 2020 from a partnership between DGRV, the Organization of Brazilian Cooperatives (OCB) and the IDEAL Institute. Among its main goals are:

TO INFORM
To be a hub for reliable content

TO CONNECT
To unite and connect stakeholders and initiatives and to create a network

TO STRENGHTEN
To strenghten and bring visibility to the movement and initiatives

TO SHARE
To share opportunities and news of the sector to the network and to those interested in the subject

Find out more on the Energia.coop website

ABOUT THE RESEARCH

The objective of this research is to map and highlight cooperative initiatives for renewable energy generation in Brazil. By doing so, we aim to raise awareness and encourage greater participation in this cooperative movement, empowering individuals to take a proactive role in the transition and diversification of our energy sources.

In addition, the research aims to foster inter-cooperation and produce tangible outcomes that can serve as valuable resources. These outcomes will showcase the numerous benefits and positive impacts of energy communities to the wider public, as well as to energy sector planners and regulators.

METHODOLOGY

Online survey released in May and June 2022

TARGET AUDIENCE

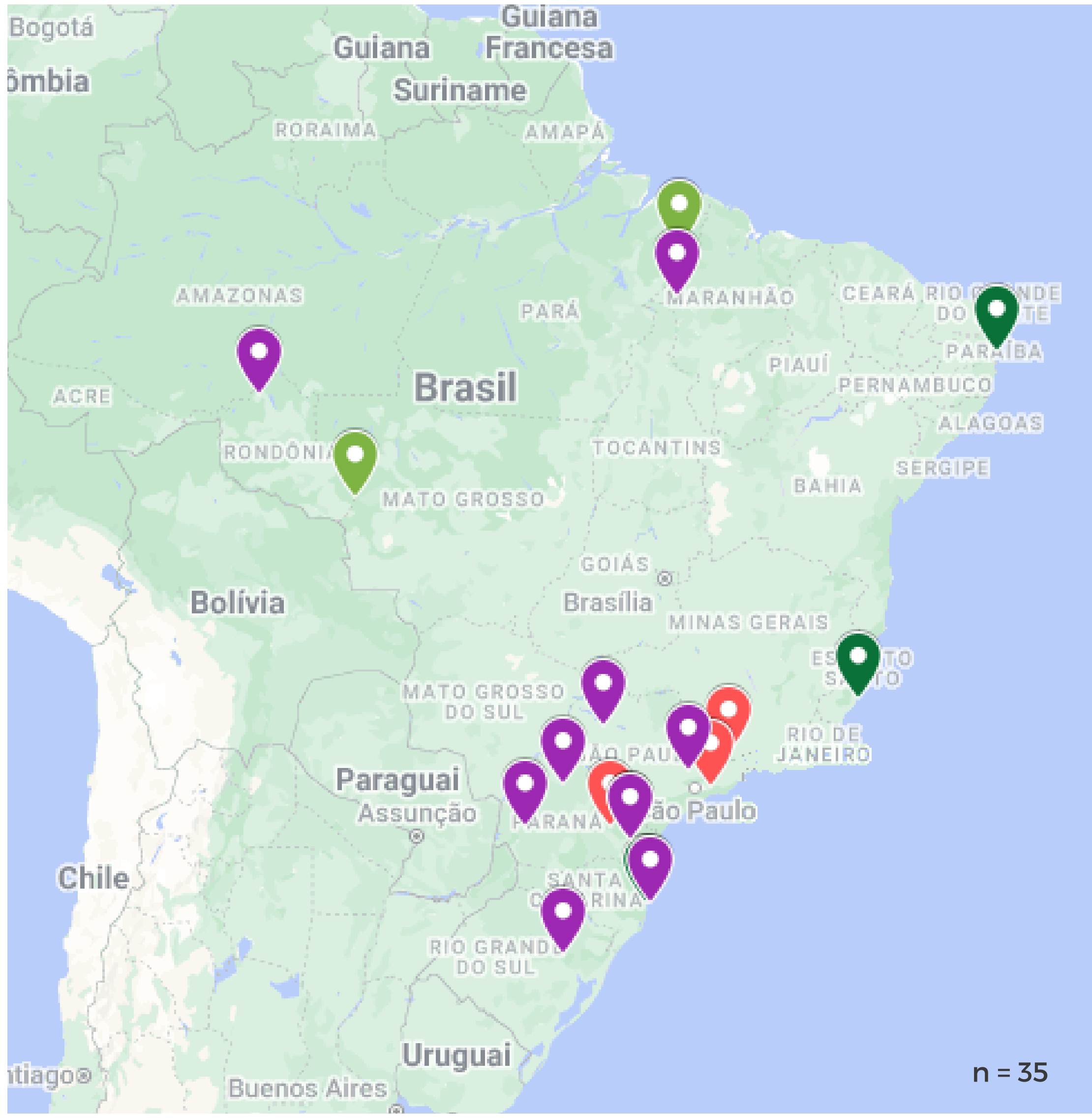
Representatives of Brazilian energy cooperatives

RESULTS

ENERGY COOPERATIVES

2016 2019
2017 2020
2018 2021 2022

FUNDED IN 2016



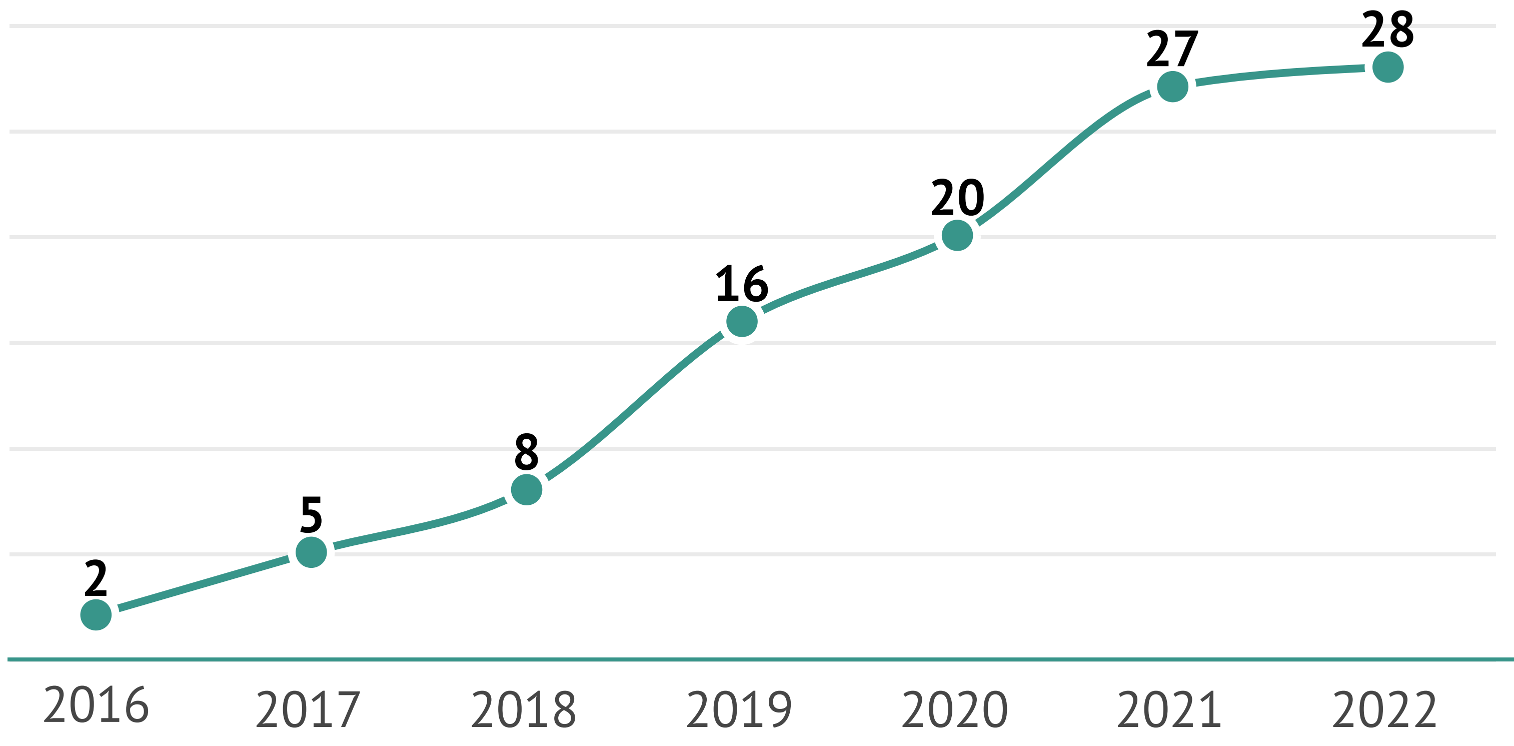
FUNDED IN 2019

FUNDED IN 2022

This map shows data from a total of 35 initiatives, 7 of which only participated in interviews in 2020 and 2021 and 28 in the 2022 survey. *Learn more about the 2020 and 2021 research here.*

ENERGIA.COOP

RESULTS



n = 28

Number of cooperatives*

The graph represents the annual growth of the number of cooperatives according to the answers obtained in the survey. **The year 2019 had the most significant increase**, with the creation of 8 cooperatives.

For this chart, only data from the cooperatives that participated in the 2022 survey were used (28).

More than
160 MW
installed capacity

n = 28

More than
24 k
members

n = 28

More than
22 k
consumer units

n = 28

RESULTS

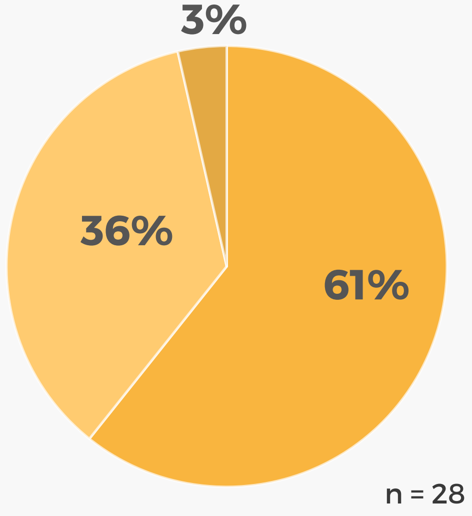
2022 RESEARCH

28 Initiatives answered the online survey

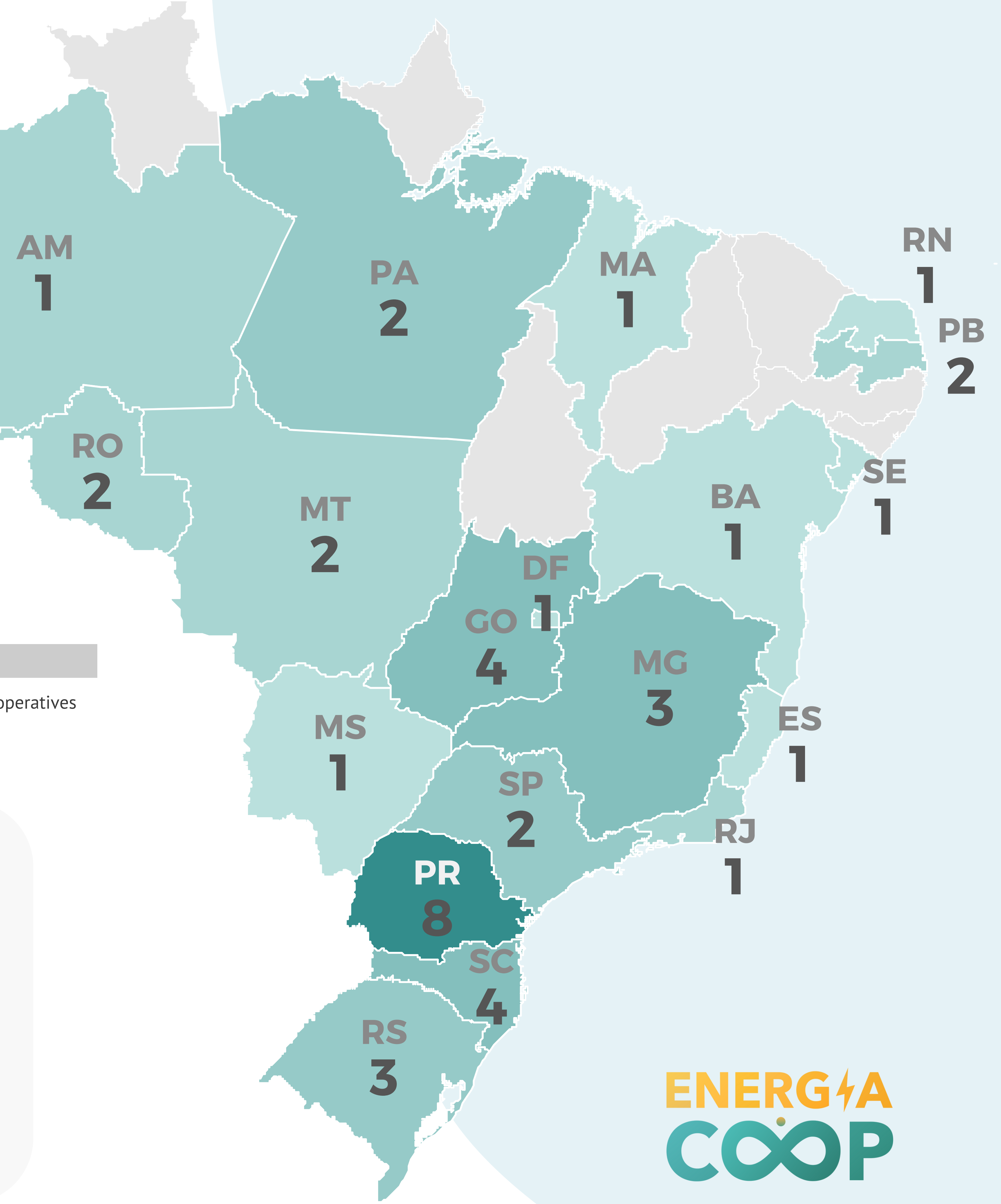
Those cooperatives operate in
18 brazilian states*

*19 including the Federal Districtl

From the 28 innitiatives that participated **61%** were composed of individuals AND legal entities.



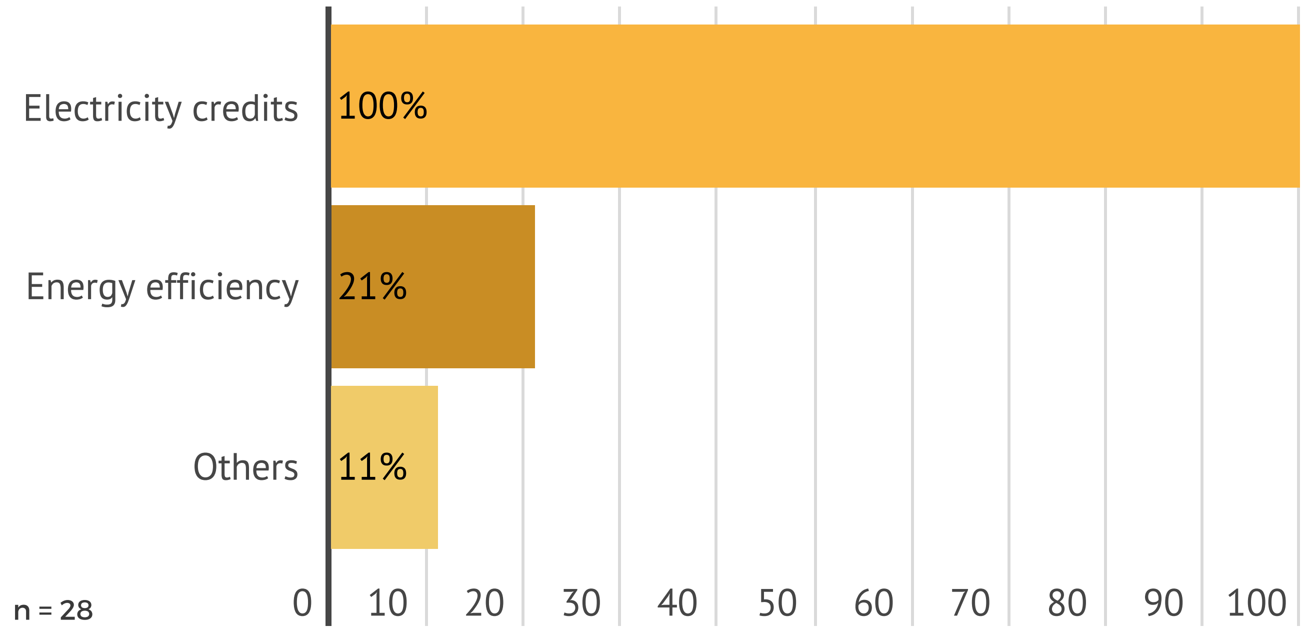
Individuals and legal entities
Only individuals
Only legal entities



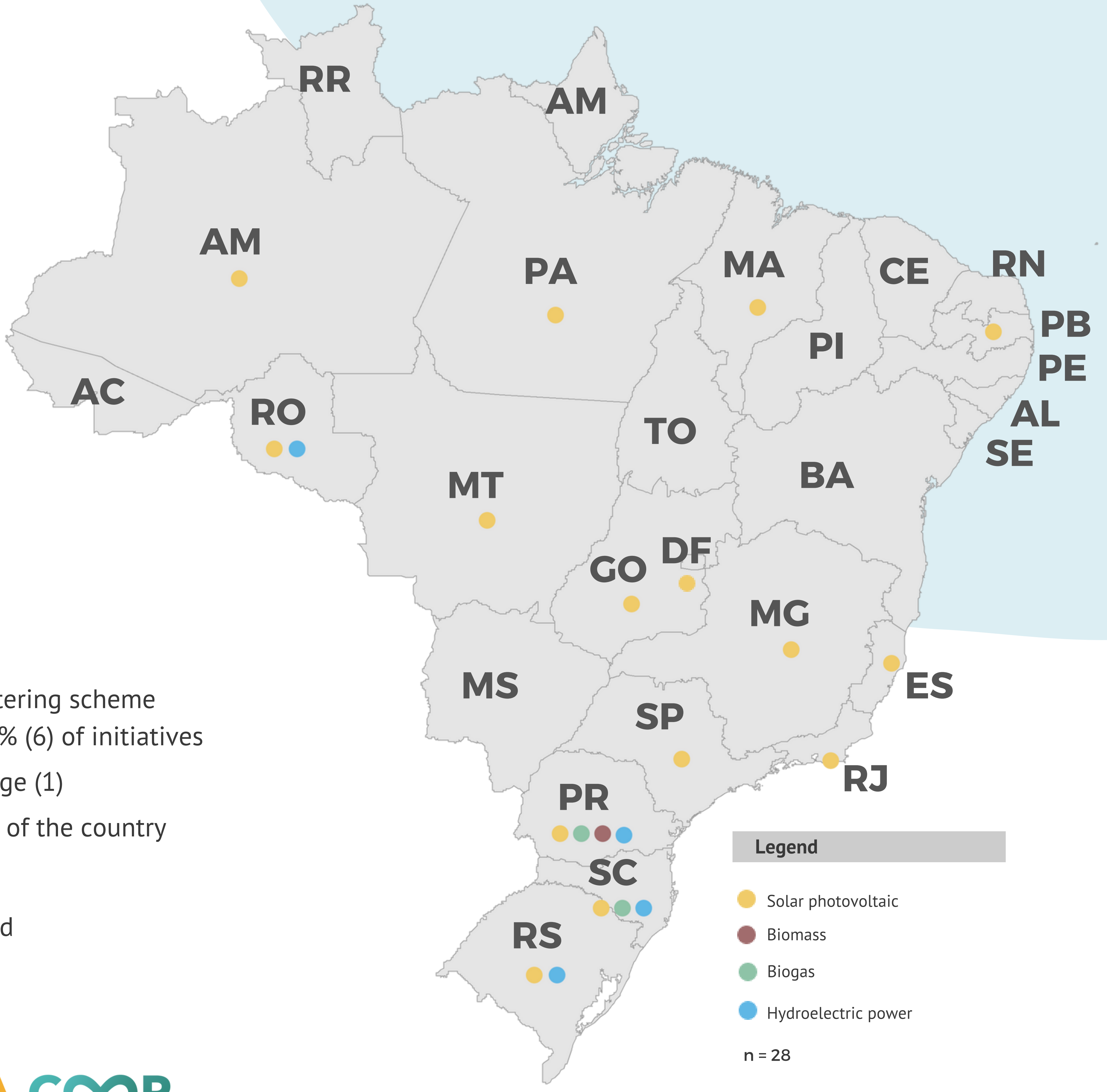
ENERGIA COOP

RESULTS

SERVICES PROVIDED E SOURCES OF ENERGY



- 100% of the initiatives (28) offer **energy credits** to their members through the net metering scheme regulated by REN 482/2012. Energy efficiency services comes second, provided by 21% (6) of initiatives
- **Other services** mentioned were Telecommunications (1), Electromobility (1) and Storage (1)
- Initiatives with **solar photovoltaic energy** generation are present in almost all regions of the country
- Only 5 of the 28 initiatives, 18%, work with **more than one** source of energy
- In the states of the South region, a **greater diversity** of energy sources can be observed



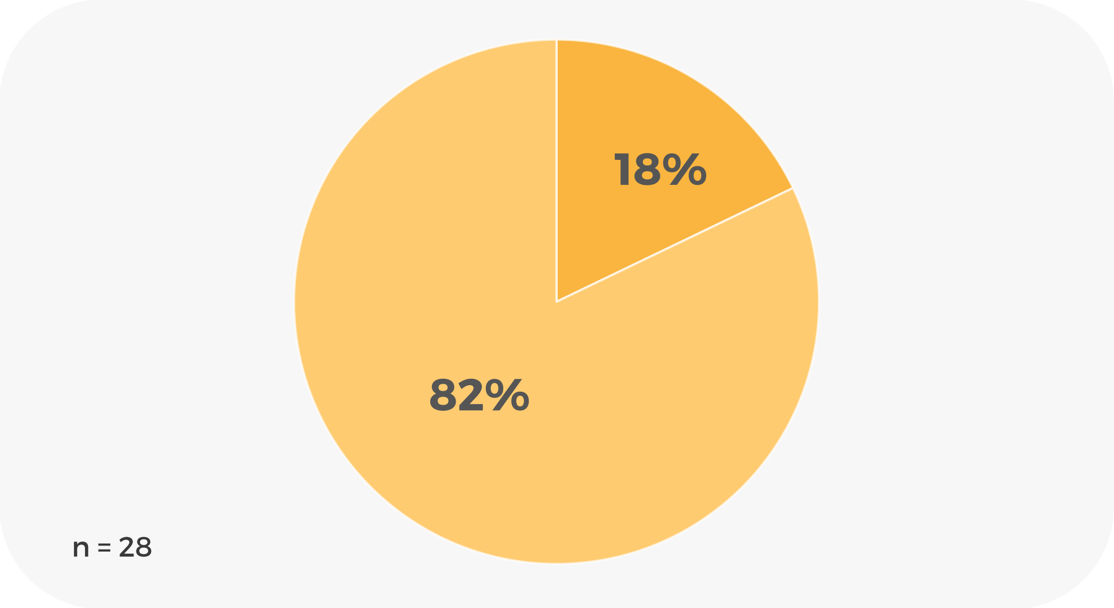
ENERGIA.COOP

RESULTS

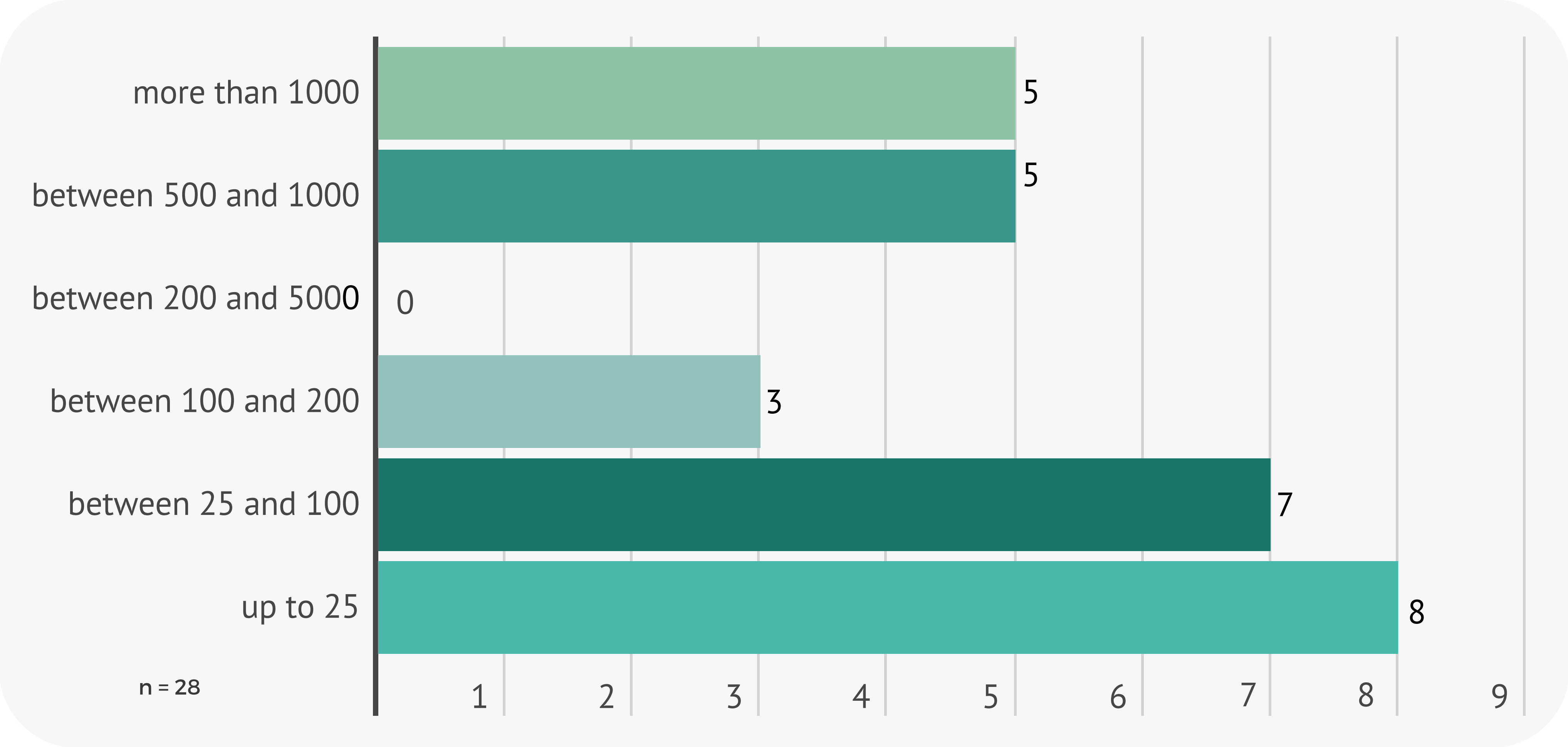
COOPERATIVE MEMBERS

- The vast majority of initiatives (15) that participated in the survey have between **20 and 100 cooperative members**
- All cooperatives that have contracted employees have **more than 200 people** associated with the cooperative

CONTRACTED EMPLOYEES



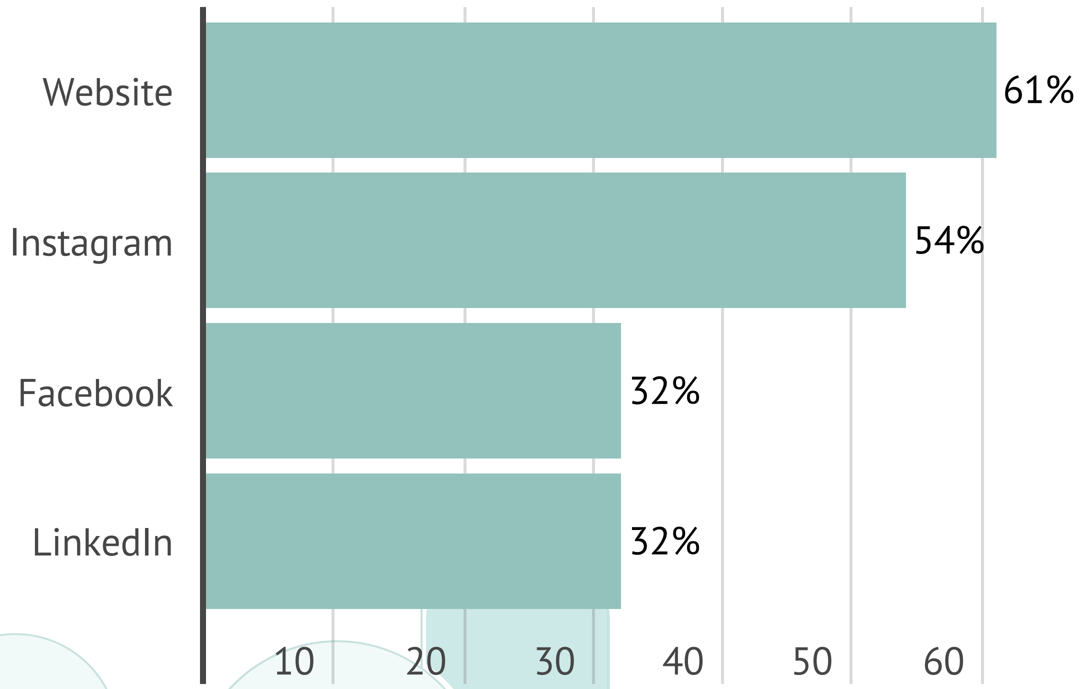
INITIATIVES BY NUMBER OF COOPERATIVE MEMBERS



RESULTS

COMMUNICATION

FORM OF EXTERNAL COMMUNICATION*

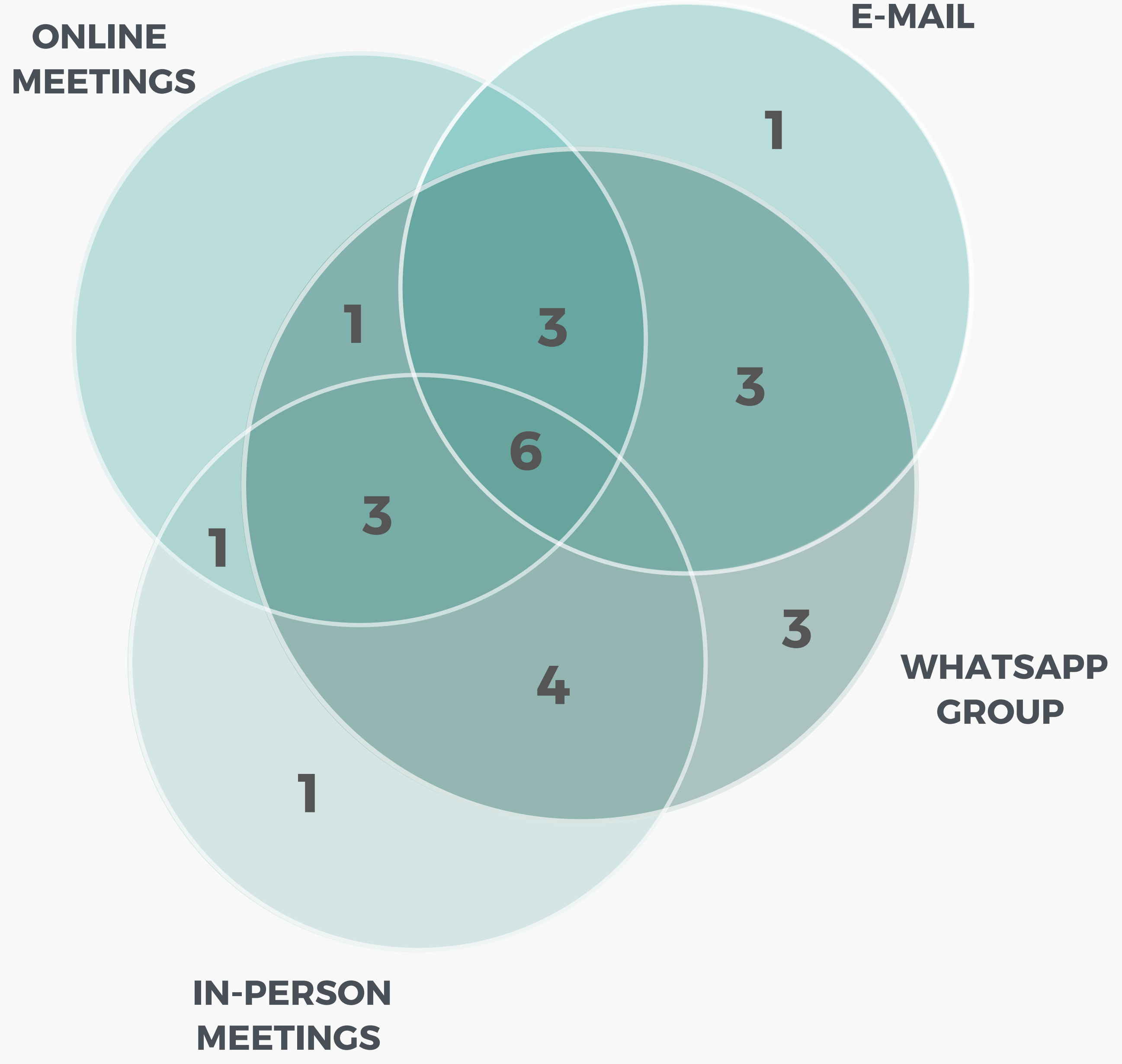


- The most used forms of external communication are **Website** (61%) and **Instagram** (54%)

**The sum of the percentages exceeds 100%, since the question allowed choosing more than one answer option.*

- 88% of the initiatives (23) use **Whatsapp Groups** for internal communication, in second place are **In-person Meetings**, carried out by 15 initiatives
- Six initiatives responded that they use **all forms of communication**

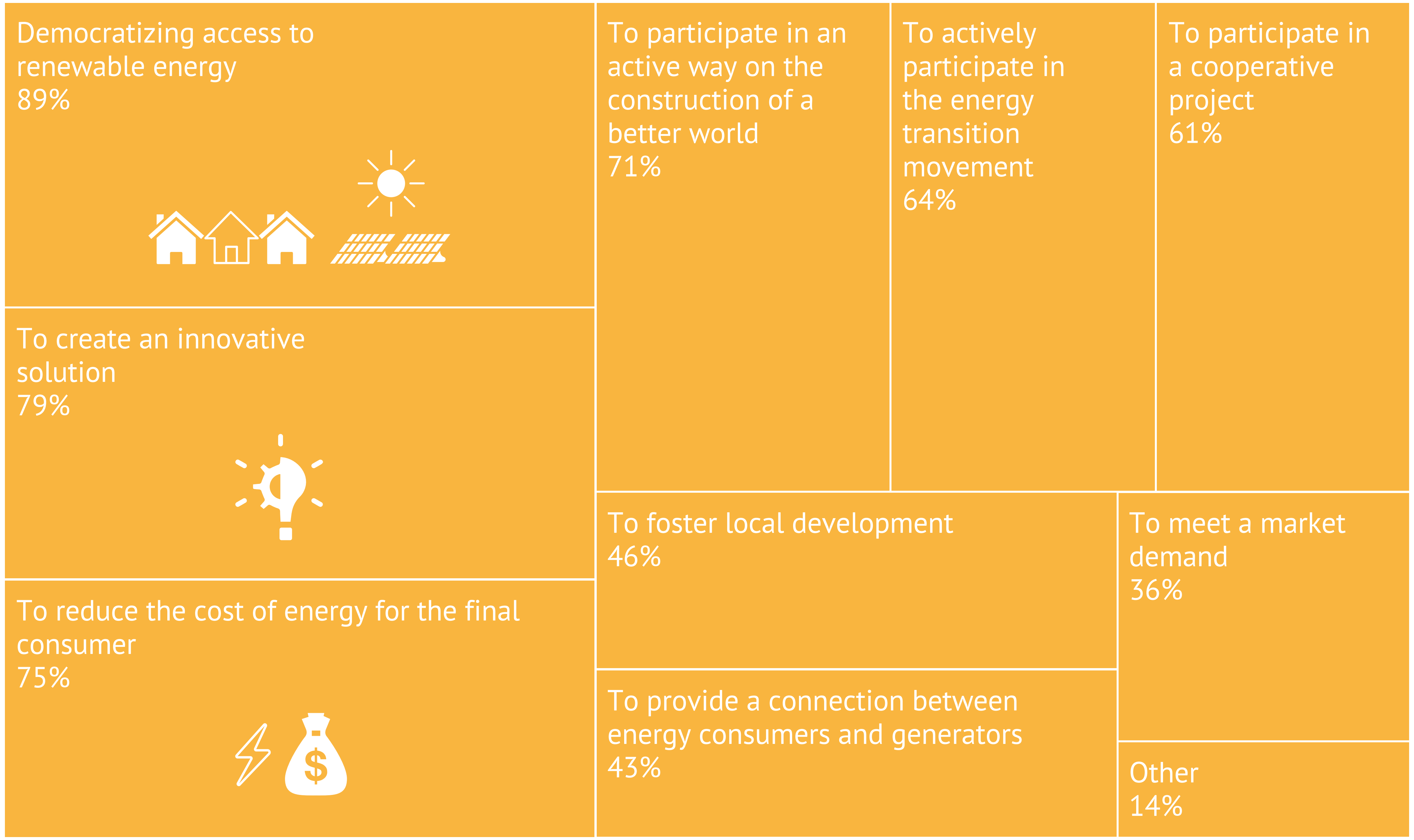
FORM OF INTERNAL COMMUNICATION



n = 26 (two cooperatives did not reply to this question)

RESULTS

MOTIVATIONS*



n = 26 (two cooperatives did not reply to this question)

HIGHLIGHTS

- **Democratizing access to renewable energy** was the most prominent motivation, being mentioned by 89% of the cooperatives participating in the survey
- **Innovation** and offering an option to **reduce the cost of energy** for the final consumer were also between the most cited motivations

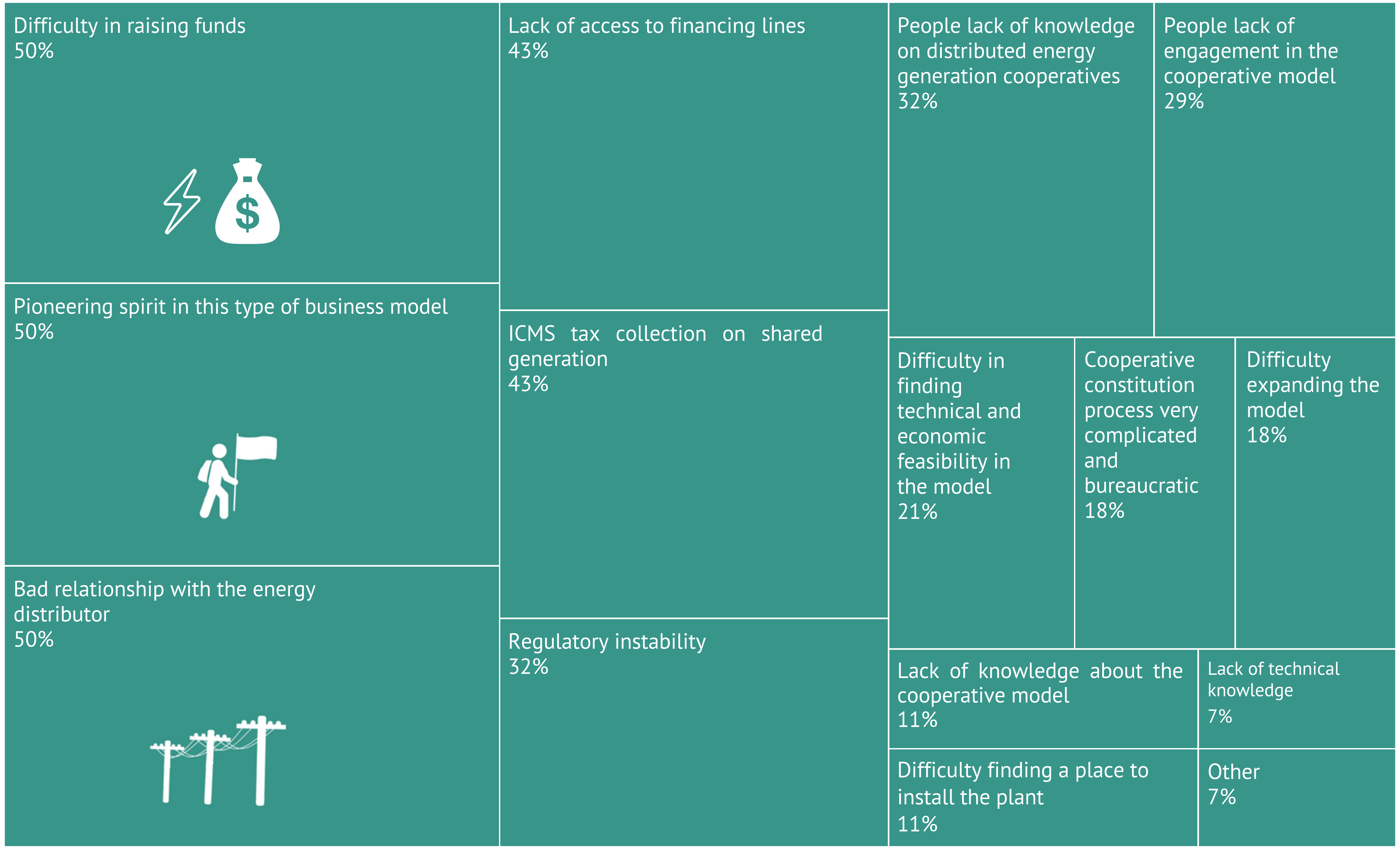
Cited as "other":

- Interaction between cooperativism and the trade union movement
- To show that profitability and sustainability are not opposites
- Life purpose

**The sum of the percentages exceeds 100%, since the question allowed choosing more than one answer option.*

RESULTS

BARRIERS*



n = 26 (two cooperatives did not reply to this question)

HIGHLIGHTS

- A **bad relationship with the energy distributor**, **difficulty in raising funds** and **pioneering spirit** were the barriers most mentioned by the cooperatives participating in the research
- These three main barriers were cited by half of the initiatives (14)
- The **lack of access to financing lines** and **ICMS tax collection** on shared generation were also barriers that gained prominence

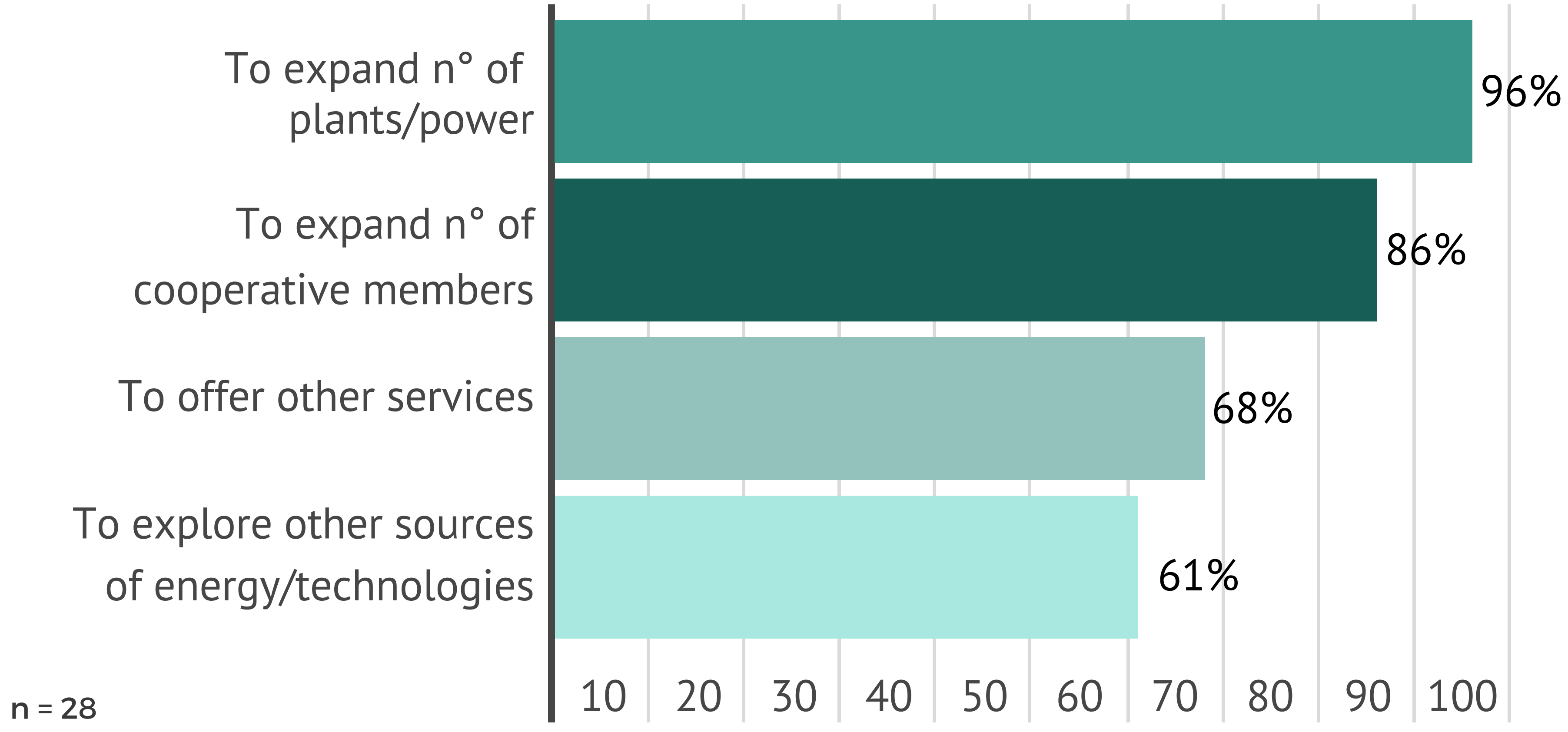
Cited as "other":

- The point of "Management digital platform" was cited twice in the "Other" field. It was mentioned in relation to the management of the cooperative and of energy credits and also for the management of the energy plant

**The sum of the percentages exceeds 100%, since the question allowed choosing more than one answer option.*

RESULTS

PLANS FOR THE FUTURE



- The main focus for the future of the initiatives that participated in the research are **Expanding the number of power plants** (27) and **Expanding the number of cooperative members** (24)

- 17 initiatives cited interest in **Exploring other sources/technologies for power generation**. The sources cited were biomethane, green hydrogen and biodigestors

RESULTS

POSSIBLE BUSINESS MODELS

From the results of the interviews conducted in 2020 and 2021 and from the 2022 survey it was possible to identify different business models adopted by the Energy Cooperative initiatives in Brazil. In general, **different actors, main elements and ways they relate to each other** were observed. These business models are systematically represented in the boxes in the diagram below:

MEMBERS
SYSTEM OWNERS
AND / OR
ENERGY CONSUMERS

COOPERATIVE
DISTRIBUTED GENERATION (GD)
OR
ANOTHER SECTOR WITH DISTRIBUTED GENERATION

Offers service for

BENEFICIARIES
MEMBERS
AND / OR
COOPERATIVE
AND / OR
OTHER COOPERATIVE

POWER GENERATION SYSTEM

Investment made by

SYSTEM INVESTMENT
MEMBERS
OR
COOPERATIVE
OR
PARTNER INSTITUTION
OR
THIRD-PARTY INVESTOR

By means of

FORM OF THE INVESTMENT
EQUITY
OR
DONATION
OR
EXTERNAL FUNDING

Installed in

PLACE
ROOF (in PV)
AND / OR
GROUND

Property of

OWNERSHIP OF THE PLACE
MEMBERS
OR
COOPERATIVE
OR
PARTNER INSTITUTION
OR
THIRD-PARTY INVESTOR

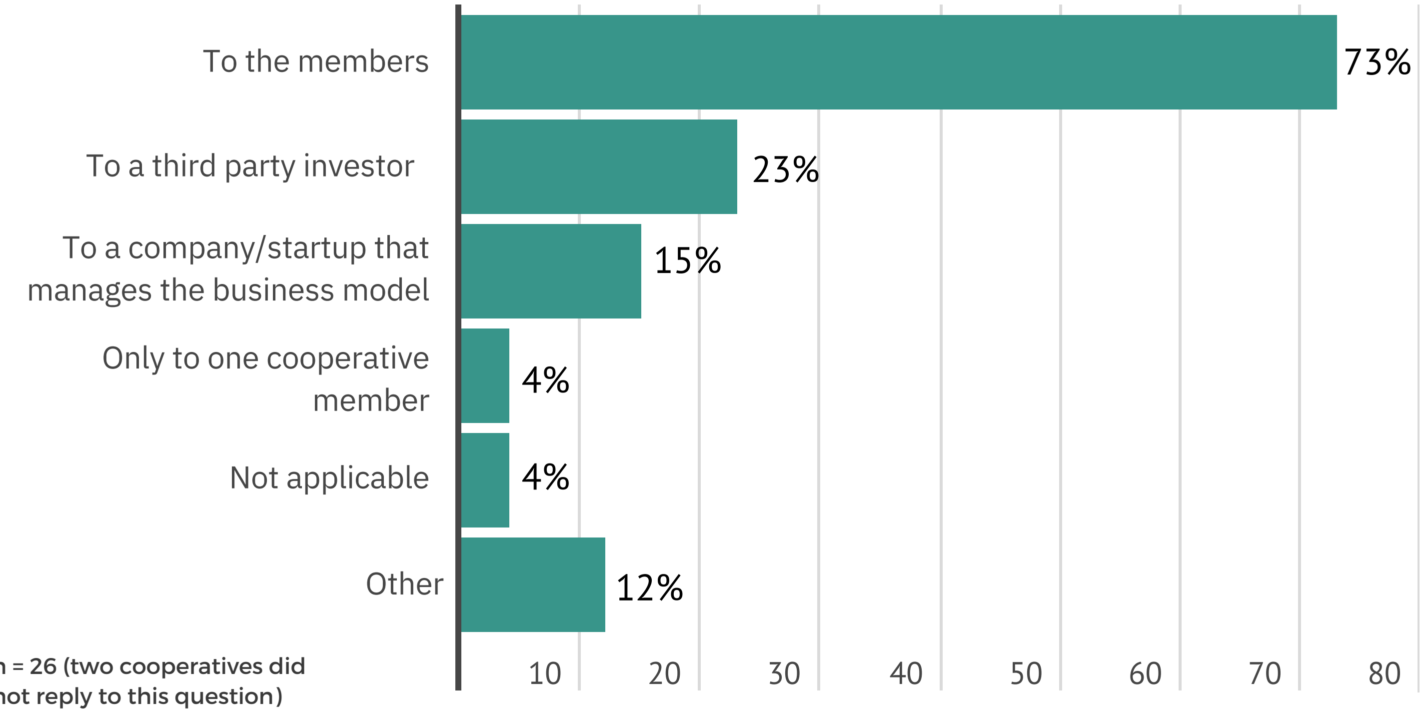
By means of

FORM OF THE INVESTMENT
EQUITY
OR
DONATION
OR
EXTERNAL FUNDING

BUSINESS MODELS

- In most initiatives, the systems **belong to cooperative members** (19). The option that is the second most frequent is the one where systems were made possible through a **third party investor**.

PROPERTY OF THE SYSTEM

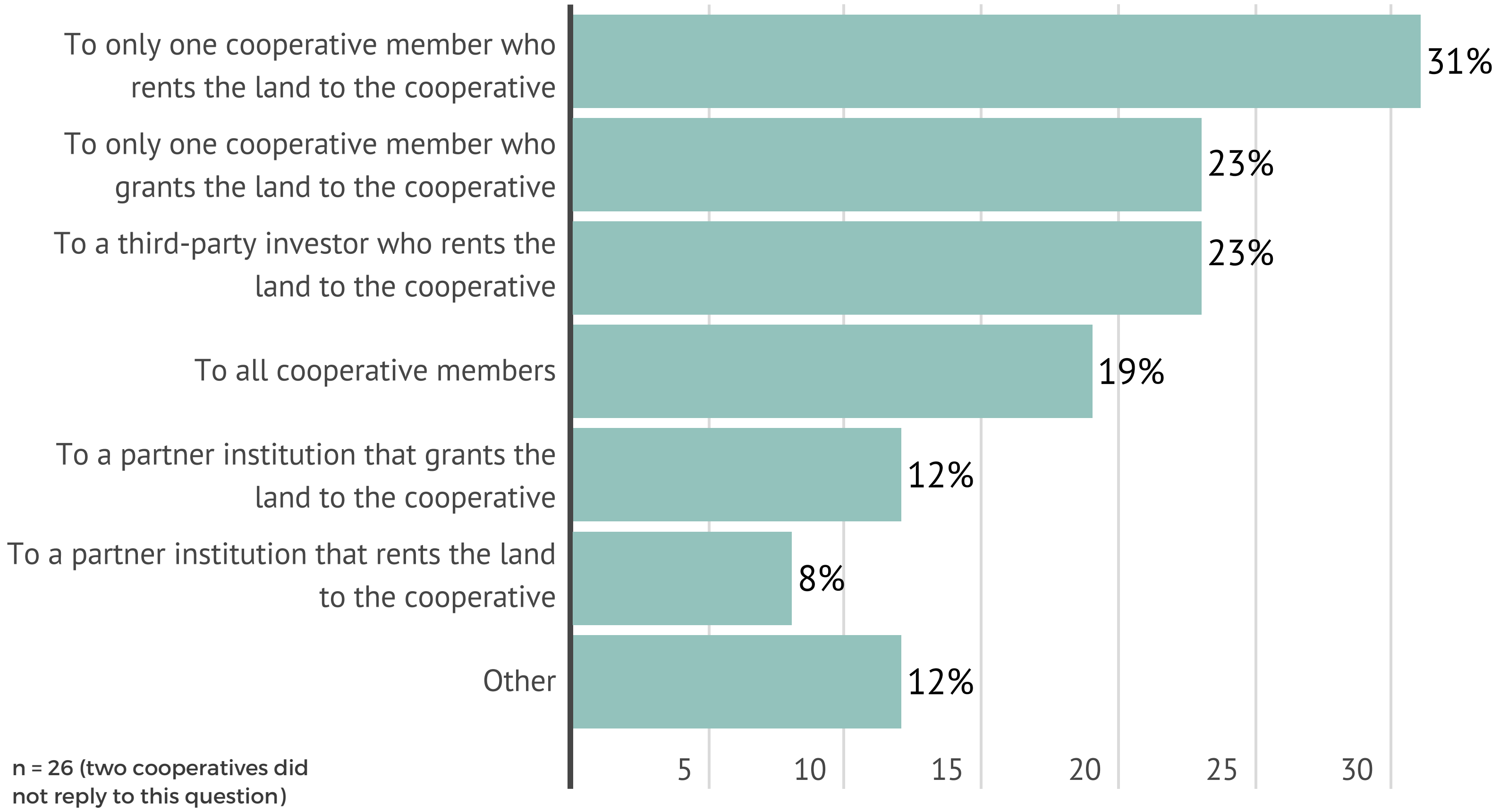


n = 26 (two cooperatives did not reply to this question)

Three initiatives selected the option "**Other**" and also the option "**To cooperative members**". Two of them mentioned that the ownership of the plants is or will be after the end of the financing stage, of the cooperative. Another initiative mentioned that the plant formally belongs to an NGO that supported its construction through donations.

- In most initiatives, the sites / land belong to **only one member who rents the land to the cooperative** (8). The two alternatives in second place (6) are: **the land belongs to a cooperative member who assigns the land to the cooperative and to a third party investor who rents the land**.

OWNERSHIP OF THE PLACE



n = 26 (two cooperatives did not reply to this question)

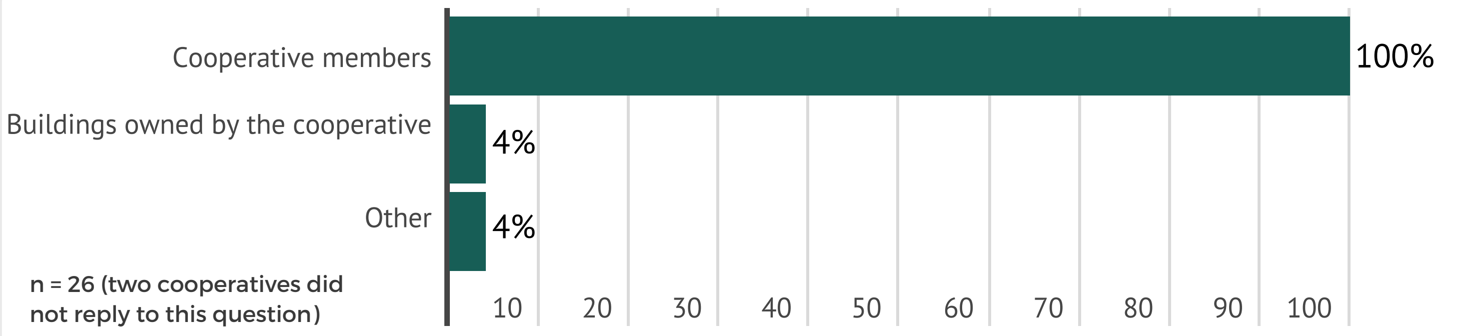
Three initiatives selected the "**Other**" option: one cooperative does not yet own land; another commented that the plant is owned by a cooperative member and is in the process of being acquired by the Cooperative and the third wrote that they still do not have a plant, but it will be on land leased from a cooperative member.

RESULTS

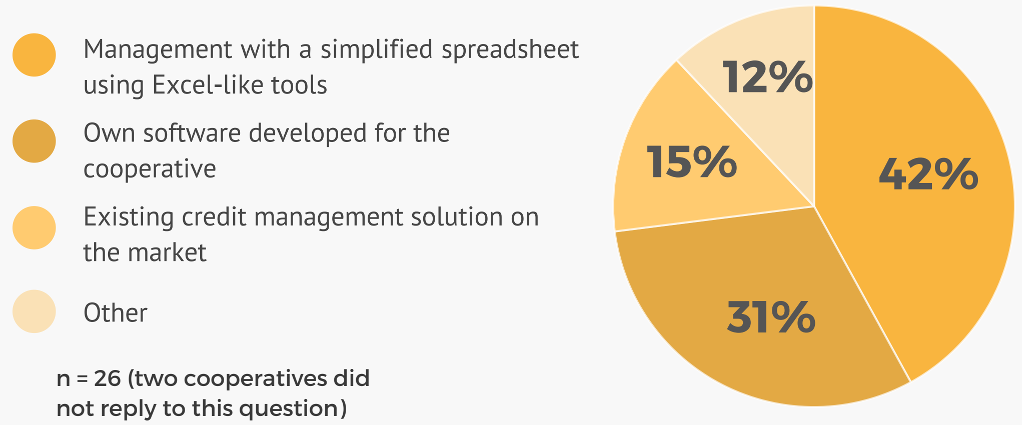
BUSINESS MODELS

- All initiatives that participated in the survey distribute **energy credits to cooperative members** and only one distributes **energy credits to cooperative buildings**.

BENEFICIARIES

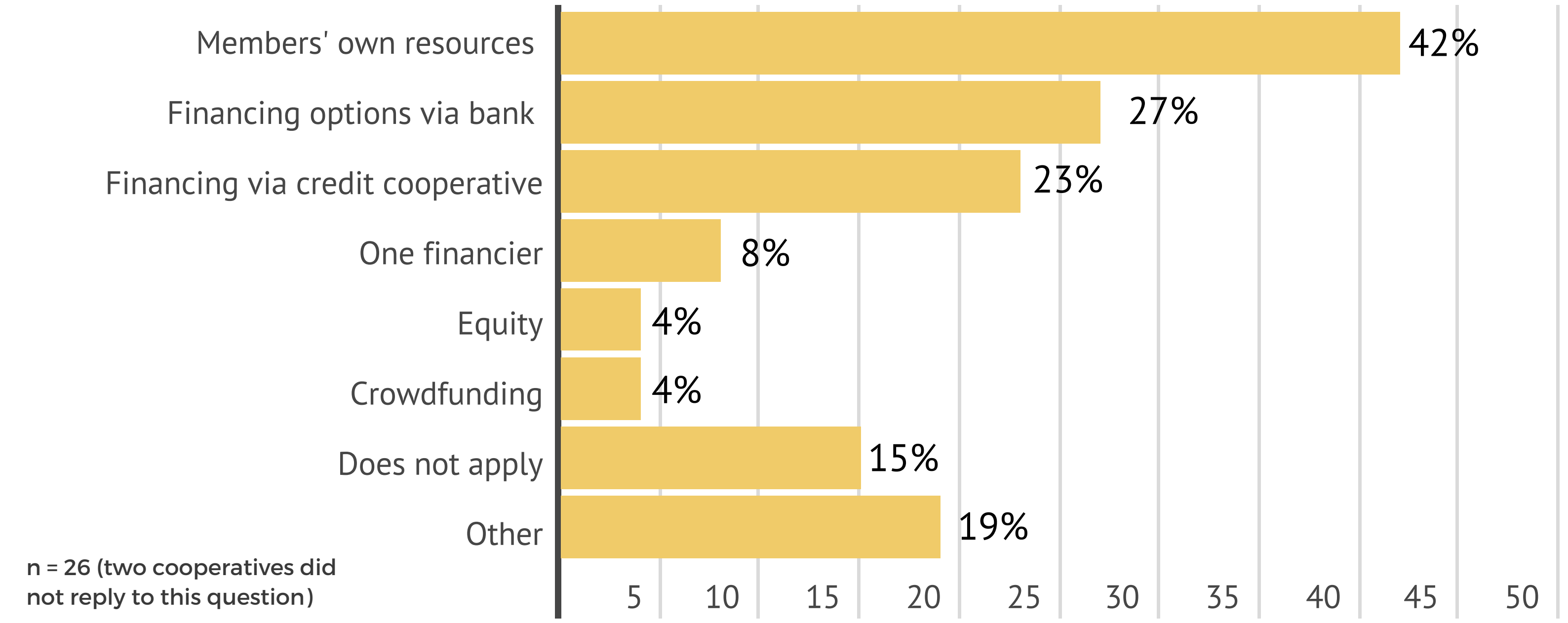


One initiative selected the option "**Other**".



- 42% of the initiatives were made financially viable from the **members' own resources** (11). In second and third place are the **financing options via bank** (7) and **via credit cooperatives** (6).

FORM OF THE INVESTMENT



Five initiatives selected the "**Other**" option. Two were made financially possible by partners, one by a Cooperative from another field, the other by donation from a company. Other comments referred to the current situation in the financing process at banks or credit unions and one initiative mentioned that the investment was made by some of the members.

- Credit management using **simplified spreadsheets** is predominant among cooperatives (11). The second most adopted alternative is using **their own software** (8) and finally the **adoption of solutions available on the market** (4).

Three initiatives selected the "**Other**" option: one mentioned that they are in the process of developing a software, another that they do not yet have a plant and another that still does not manage credits.

CONCLUSION

2022 RESEARCH

- Energy Cooperative initiatives already exist in **70% of Brazilian states. Paraná** is the state with the highest number of active initiatives (eight of the 28 respondents are in that state)
- **Solar Photovoltaic technology** is the most common way of generating electricity in the Energy Cooperative models
- About **half of the initiatives** that participated in the survey have **up to 100 members** and only 18% of the responding initiatives have more than 1,000 members
- **Cooperative Energy is growing** in number of initiatives and the vast majority of existing ones that participated in the survey intend to expand in number of power plants (96%) and number of cooperative members (86%) in the coming years
- Despite having different business models, the initiatives that participated in the survey showed **similar motivations**, with greater emphasis on the democratization of access to renewable energies
- The **difficult relationship with energy distributors** was pointed out as one of the main barriers, and represents a barrier at the national level, since it was mentioned by cooperatives that operate in 18 different states

CONCLUSION

OPPORTUNITIES FOR COOPERATIVE ENERGY

- *Energia Cooperativa* is a movement that is gaining more and more **voice and space** in a sector that is expanding in the country. The law 14,300 brought more regulatory security so that these initiatives continue to expand and become even more established in the coming years

- The generation of **energy credits** is the model that gained the most attention, since all the initiatives that participated in the survey claimed to offer this service. However, the tendency is for new services to begin to be offered in the coming years, since almost 70% of the responding initiatives mentioned that they plan to offer other services to their members (such as energy efficiency measures, electromobility and storage)

- **Biogas** and **Green Hydrogen** appear as potential energy generation technologies to be further explored in the future by Energy Cooperative initiatives in the country

- **Intercooperation** actions between the initiatives show great potential to solve some of the current barriers, such as access to funding and the development of credit management digital platforms

More information at energia.coop
contato@energia.coop

An initiative by:

In partnership with: