

28th Cemig  
Investor's Meeting

# THE BEST OF MINAS GERAIS TO YOU

A business meeting on leadership,  
with strategic discussions, networking opportunities,  
and a lot of updates on “Minas Gerais”

# Welcome!

**CEMIG 70**  
A NOVA



# ACCELERATING CEMIG'S VALUE CREATION AND TRANSFORMATION

Reynaldo Passanezi Filho - CEO

Certain statements and estimates in this material may represent expectations about future events or results, which are subject to risks and uncertainties that may be known or unknown. There is no guarantee that events or results will occur as referred to in these expectations.

These expectations are based on the present assumptions and analyses from the point of view of our management, in accordance with their experience and other factors such as the macroeconomic environment, market conditions in the electricity sector, and expected future results, many of which are not under our control.

Important factors that could lead to significant differences between actual results and the projections about future events or results include Cemig's business strategy, Brazilian and international economic conditions, technology, our financial strategy, changes in the electricity sector, hydrological conditions, conditions in the financial and energy markets, uncertainty on our results from future operations, plans and objectives, and other factors. Due to these and other factors, our results may differ significantly from those indicated in or implied by such statements.

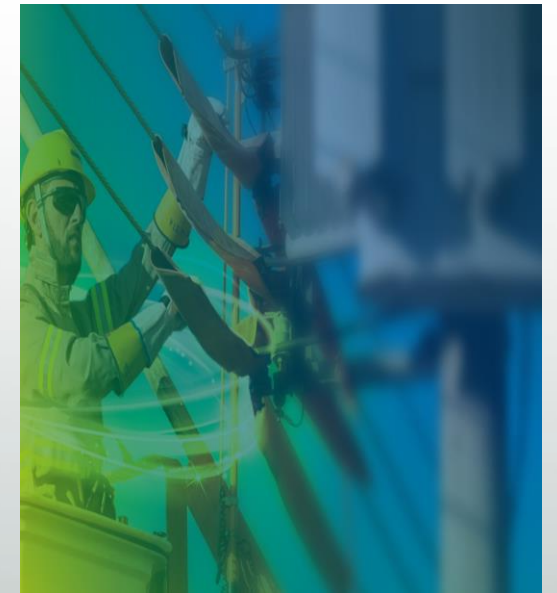
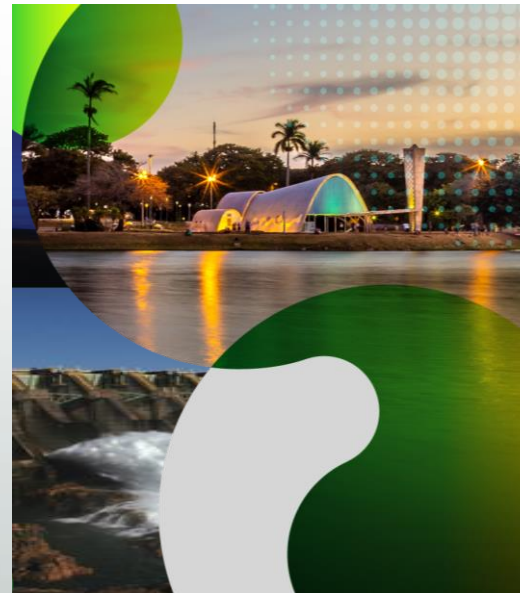
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# STRATEGY

INVESTMENTS FOCUSED ON MINAS GERAIS,  
SEEKING MAXIMIZATION OF RESULTS  
THROUGH SUSTAINABLE MANAGEMENT



## New approach to capital allocation

- **Investment outside Minas R\$ 34.1 billion\*** in minority stockholdings, without control, and without adequate return.
- **Low investment in the regulated businesses** – averaging **1.0 billion/year** (in 2014-2019)



### 2019 – 2022 Investing efficiently

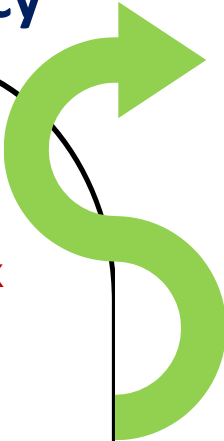
- **Divestments** – recovering cash of **R\$ 6.5 billion\***
- **Investments in Minas R\$ 2.76 billion/year** (7x more than in 2009–18)
- **Market valuation R\$ 28.2 billion**  
At Dec. 2022:  
Up 180% from September 2018,
  - 2.2x appreciation of the IEE index,
  - 5.8x appreciation of the Ibovespa)




### 2009-2018 Investments outside Minas

\* Updated by IPCA+6% (Dec/22): dividends received, asset disposals and valuation

## Greater financial health, and efficiency



- Inappropriate level of leverage**, with Net debt / Ebitda reaching **5x**
- R\$ 4.9 billion\*** in expenses exceeding the regulatory limit;
- R\$ 2.8 billion\*\*** in energy losses
- Inappropriate** debt profile, with pressure on cash in short and medium term

 **2009 – 2018**  
**Deterioration and indebtedness**

 **2019 – 2022**  
**Return of economic equilibrium**

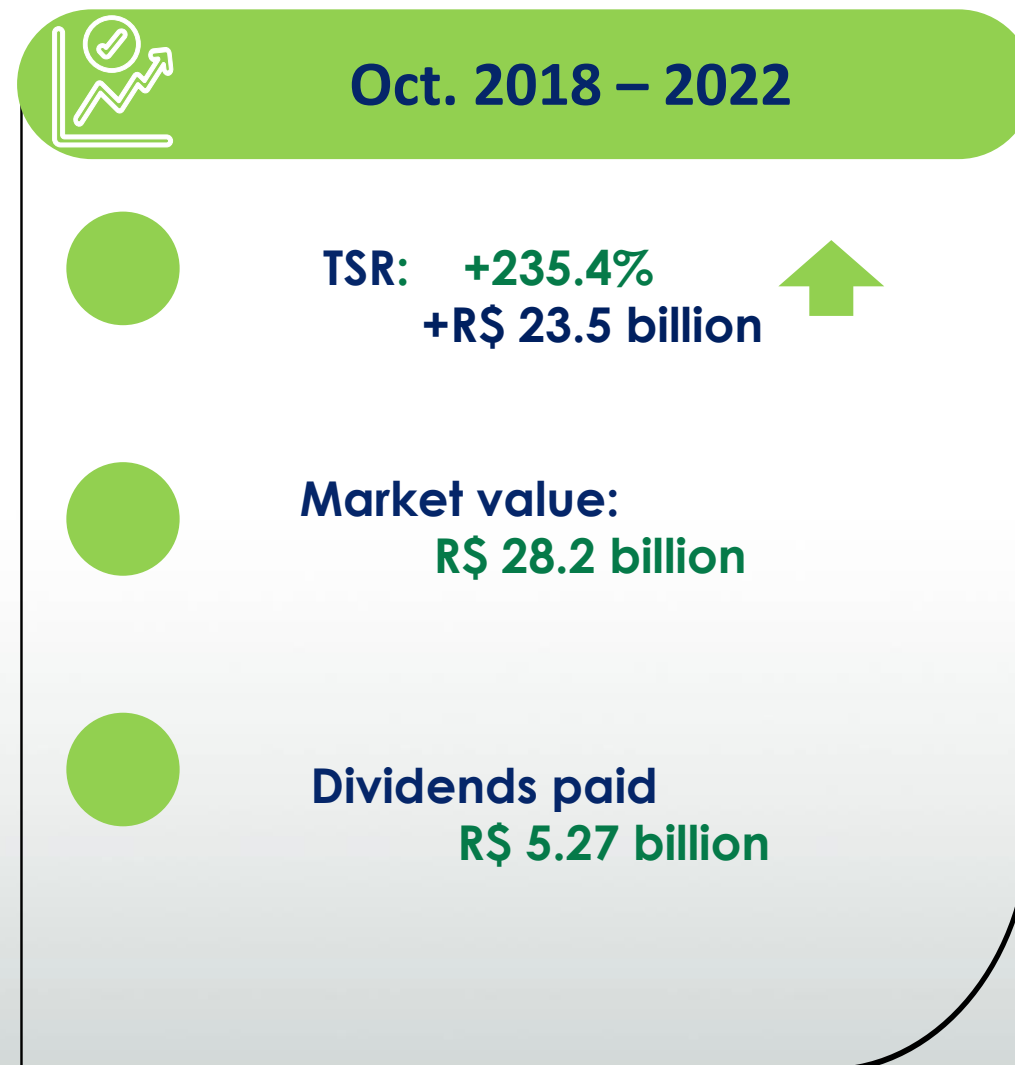
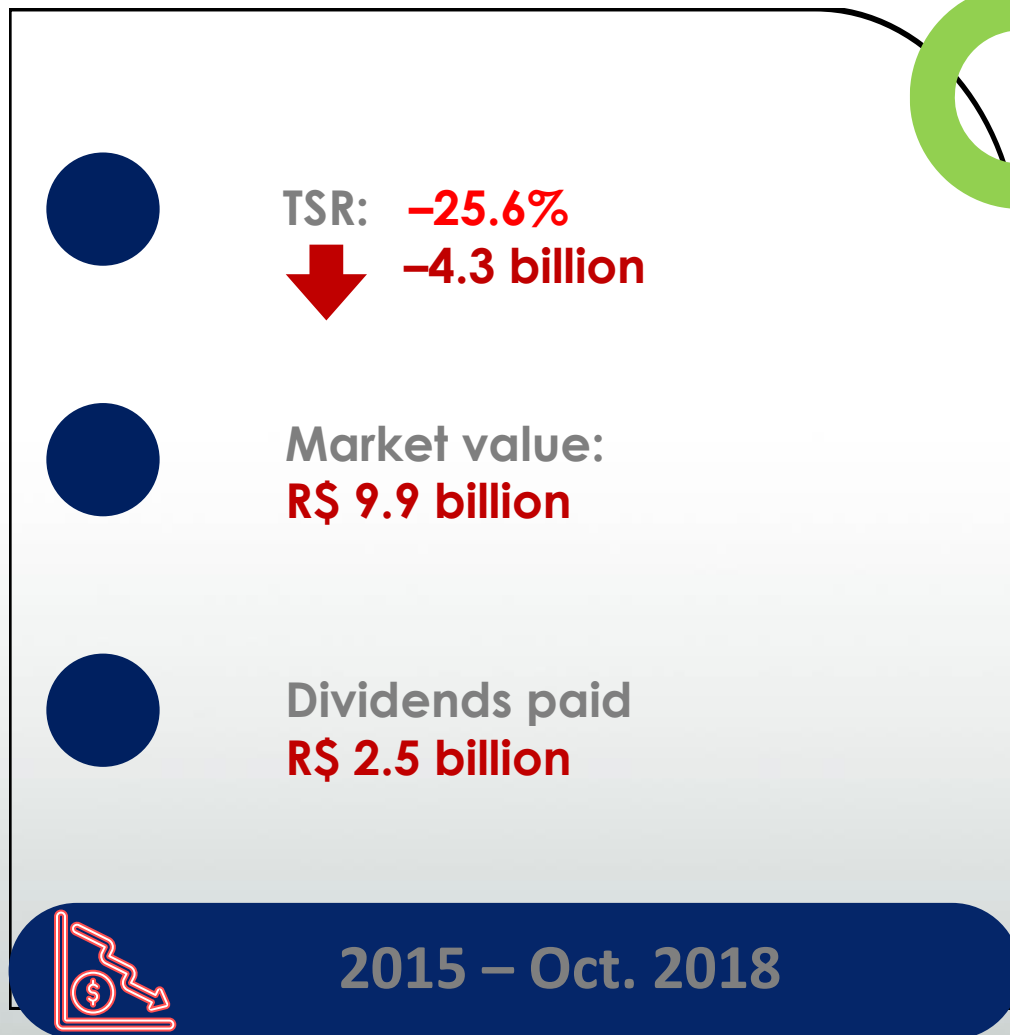
- Leverage** returned to **appropriate levels**; rating agencies recognize our credit quality (**AA+**)
- Operational **expenses within the regulatory limit**, and **energy losses below the regulatory limit**, in the last **2 years**
- Record Ebitda of R\$ 8 bn\*** in 2021
  - lower leverage, of **0.99x** in 2022,
  - creating space to support growth

  
**First time ever**

\* Historic values

\*\* Based on tariff approved in 2022

## Stock price appreciation + dividends

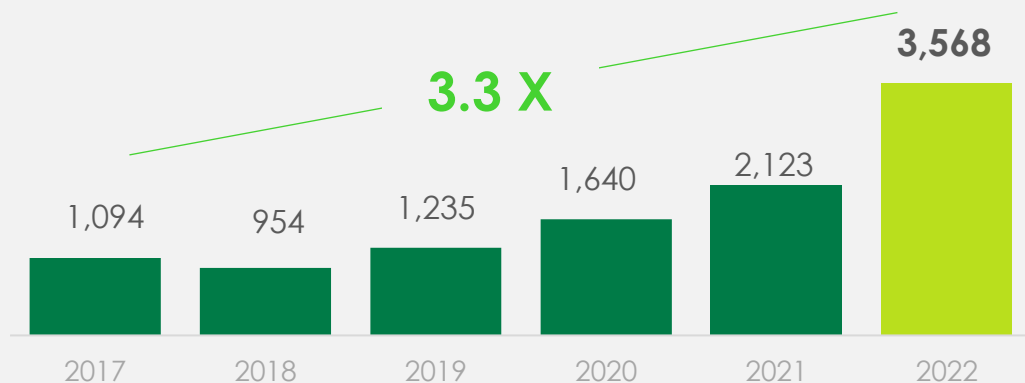




FOCUS ON **MINAS**  
FOCUS ON THE  
**CLIENT**



“ EXECUTION OF LARGEST INVESTMENT PROGRAM IN CEMIG’S HISTORY ENSURES MODERNIZATION AND RELIABILITY OF CEMIG’S ELECTRICITY SYSTEM ”



## DISTRIBUTION

R\$ 2,923 mn

Investments in maintenance and modernization of the electricity system



## GENERATION

R\$ 137 mn

Expansion and modernization of generation



## TRANSMISSION

R\$ 339 mn

Strengthening and upgrading – with increase in RAP



R\$ 82mn

Infrastructure



R\$ 53 mn

Infrastructure

Structural **investments**, with strong focus on **modernization and digitization** of assets, resulting in improved electricity supply **quality**, and **efficiency** of operational processes



### Cemig Strategic Plan, 2021–2025

R\$ **22.5** Billion

### Capex contracted

R\$ **18.2** Billion (81%)

### Amount executed, 2021–2022

R\$ **5.7** Billion (25%)

ACCELERATING  
**CEMIG'S**  
TRANSFORMATION

Largest investment plan in Cemig’s history – underlines the strategy: **“FOCUS AND WIN!”**



**Investments of R\$ 42.1 bn in 2023–2027**

### Focus on Minas Gerais

– in power generation, transmission and distribution, providing **excellent service to the client**, with **safety and maximum efficiency**, through **sustainable management based on results**, while making the largest **investments in the company’s history**.



### Regulated sectors – networks with monopoly

- R\$ 18.4 bn **in Distribution**
- R\$ 3.5 bn **in Transmission**
- R\$ 2.3 bn **in natural gas**

### Free markets – competitive environments

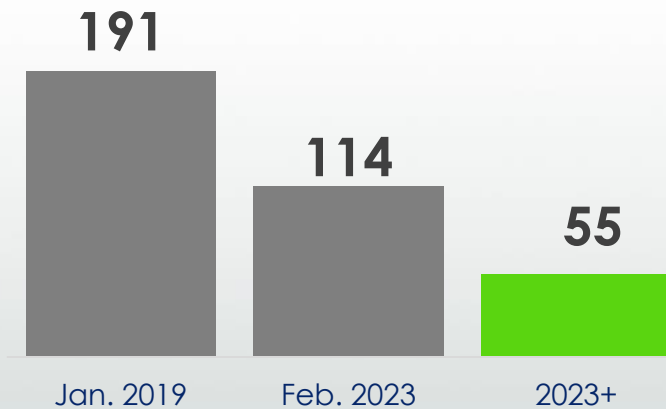
- R\$ 13.4 bn **in generation**
- R\$ 1.4 bn **in innovation/IT**
- R\$ 3.2 bn **in distributed generation**

**R\$ 2.1 billion** cash inflow from disinvestments since 2019

**R\$ 1.9 billion** of cash injections avoided (in the investees divested)

**R\$ 1.1 billion** in tax credits

**Stockholding interests – after disposals**  
(number of investee companies)



**Advantages gained**  
(obligations reduced)

- Guarantees reduced
- PPA released
- Cash preserved (no cash injections)

**Disposals completed:** Light, Renova, Santo Antônio, Ativas, Axxiom



Serve **2 more meso-regions** of Minas Gerais

Expand use of the **existing gas pipelines**

Add **86,000 new clients**

Build **917 km of network**

Invest **R\$ 1.8 billion** in the gas distribution system

**Diversify suppliers of gas** through **public tenders**

Study use of **Biomethane in distribution**

“ **Strengthen**  
Gasmig’s  
presence in  
**Minas Gerais**  
State ”

**CENTER-WEST PROJECT**

- **300 km** of network to be built
- **Investment of R\$ 780 mn**
- **24 months of works from 2023**

**EXTREMA PROJECT –  
POUSO ALEGRE**

- **Connection** to transport pipeline
- **130 km** of network to be built
- **Investment of R\$ 780 mn**
- Works **from 2025**



## INVESTMENTS

- From 2019 to 2022 **R\$ 175 mm** was invested in **buying assets**, and **R\$ 70 mn** in **closing transactions** for new photovoltaic plants
- **R\$ 640 mm** injected in **2023** for investments in expansion of the asset portfolio
- These new investments will **add 125 MWp** of supply to clients, **doubling the company's operational capacity**
- Target: **R\$ 3.2 bn** by 2027, adding **540MWp**
- Average **real return** between **11% and 14%**.



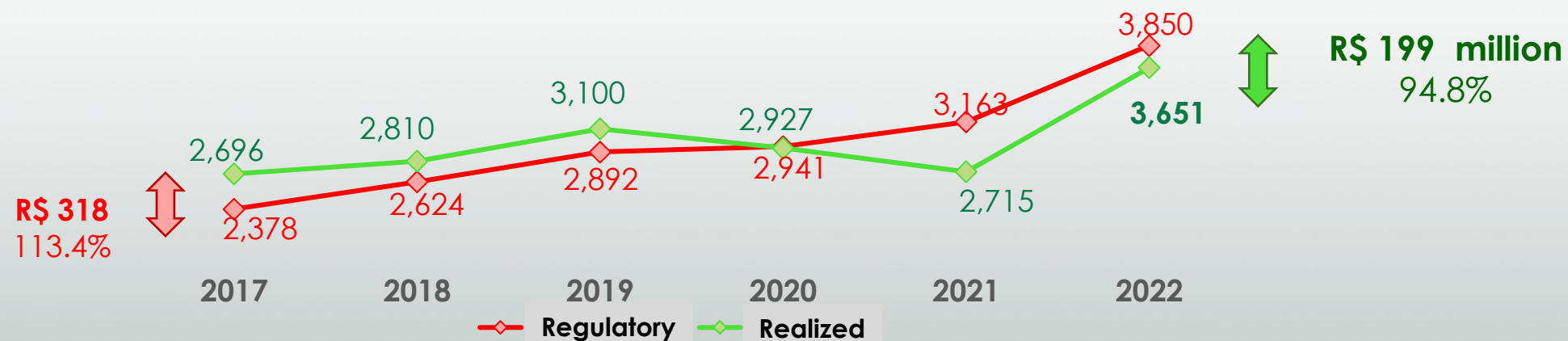
We continue to be **within** the regulatory parameters, ensuring **total coverage** of our **operational expenses**

- 2022 **opex** of Cemig D was **R\$ 199 million below** the regulatory level
- **Ebitda** was **R\$ 60 million above** the regulatory level

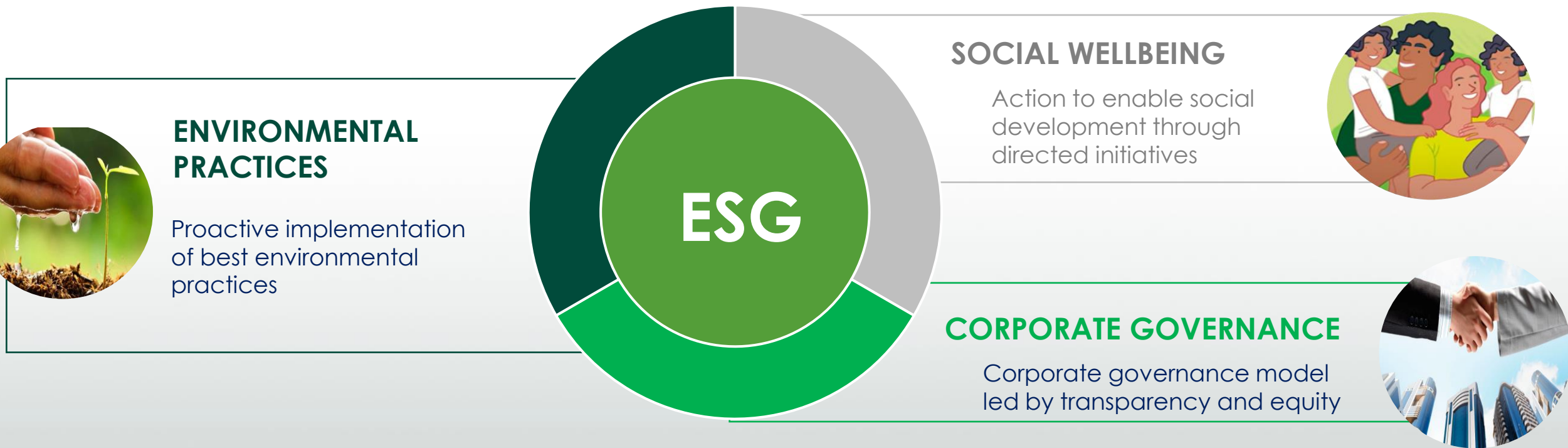
## EBITDA



## OPEX



Cemig reaffirms its **commitment** to sustainability through practices of **environmental conservation, social responsibility** and **corporate governance**





Consolidation of a **progressive organizational culture**, creating a **secure, meritocratic, diverse and inclusive environment**, enabling **sustainable enterprise results**

### CULTURE THAT VALUES THE CLIENT

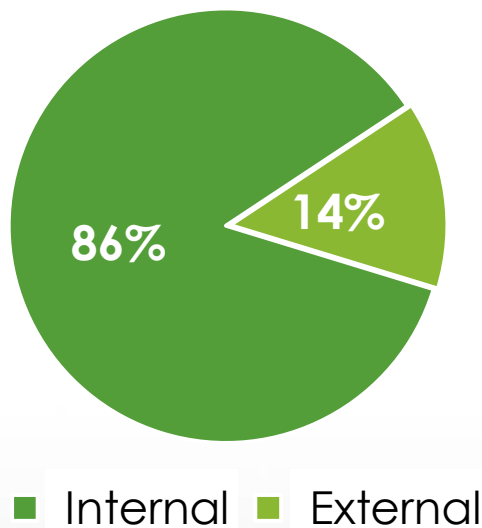
Client satisfaction as principal factor directing the organization's culture



### CULTURE OF EXCELLENCE

Inspirational leadership, high-performance teams, meritocracy and excellent results

## Talents



- Management decision: **up to 40%** of leadership positions can now be offered to talents in the market
- Opportunity to combine the vast experience of the 'family silver' with **best talents from the market**

## Company Atmosphere Survey – Overall approval



- Highlights of the approval ratings:
  - **Overall satisfaction (86%),**
  - **Diversity (82%)**
  - **Opportunity for growth (64%)**



## LOW INCOME TARIFF

- **1,187,000** families benefited
- Number of beneficiaries increased by **more than 100%** from 2018 to 2022
- Inclusion of a total population equal to that of Belo Horizonte
- Families inscribed **save** an average of **R\$ 56.00** per month\* on their energy bills



## ENERGIA LEGAL program

- **Regularize** supply in **poor communities**
- **Greater safety for the population**
  - lower non-technical losses
  - increased quality of supply
- **240,000 families** benefited by 2027, for investment of **~R\$ 1 billion**



## MINAS LED program

- **490 municipalities** participating
- More than **120,000 public lighting points** will be replaced
- Investment of **R\$ 103 million**

\* Based on average ticket for Cemig low-voltage supply – 132 kWh (R\$ 103.88).

- **B3 SUSTAINABILITY INDEX – 2022**

- **DOW JONES INDEX**

**IN THE DOW JONES INDEX FOR THE LAST 23 YEARS**



- **AMBITION NET ZERO**

**INVESTMENTS IN CLEAN GENERATION;  
DE-ACTIVATION OF CEMIG'S ONLY THERMAL PLANT IN 2029**



- **GREEN BONDS**

**FIRST-EVER ISSUE IN CEMIG'S HISTORY  
OF DEBT SECURED ON SUSTAINABLE PROJECTS**





CLEAN200™

TOP-RANKED  
BRAZILIAN COMPANY  
IN  
CARBON CLEAN200™

Annual Global ranking of the  
200 listed companies that led  
initiatives for transition solutions –  
for a CLEAN ENERGY FUTURE

CONSERVATION AND REFORESTATION OF  
ATLANTIC FOREST AND CERRADO TO RESTORE  
LOCAL LANDSCAPE AND BENEFIT BIODIVERSITY



Planting of more than  
1 million saplings  
In the next 5 years



Maintenance of 1200  
hectares (equivalent to  
1,200 soccer fields)



Investment of  
More than R\$ 107 million  
in 2022



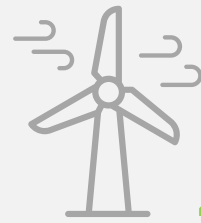
In line with the Global  
Biodiversity Framework  
and SDG15

THE **ENERGIA LEGAL** ('LEGAL ENERGY') PROGRAM TO REGULARIZE ELECTRICITY SUPPLY TO **240,000 FAMILIES** IN LOW INCOME COMMUNITIES BY 2027, WITH FOCUS ON **CITIZENSHIP AND SOCIAL RESPONSIBILITY**

- ✓ Prevention of accidents
- ✓ Improvement of quality in supply of energy
- ✓ Less overload on lines, less burnout of equipment
- ✓ Mitigation of impacts on the environment
- ✓ Less waste in energy consumption
- ✓ Less losses for the distributor, society and Minas Gerais state



97%



2%



1%



The background features a scenic landscape of rolling mountains under a warm, golden sunset sky. In the bottom right corner, a portion of a bright green globe is visible. The text is overlaid on this scene.

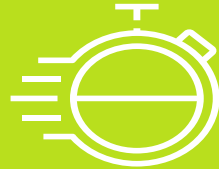
**SUCCESS**

**IN IMPLEMENTATION OF THE  
STRATEGY**



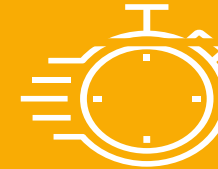
## ACHIEVED

- ✓ **Opex below** regulatory limit (annual basis)
- ✓ **Non-technical losses** – below regulatory level
- ✓ **DEC** outage indicator within regulatory limit
- ✓ **Bonds** liability management
- ✓ Strengthening of **Cemig D's Investment Program**



## IN PROGRESS

- ✓ **Divestment** of **non-strategic** assets
- ✓ **Restructuring** of post-retirement benefit plans
- ✓ **Digital transformation** and investment in technology
- ✓ Investment in **renewable generation sources** (wind, solar)



## FUTURE CHALLENGES AND OPPORTUNITIES

- ✓ **Renewals** of concessions
- ✓ Growth in **retail electricity sales**





# ANALYSIS OF THE RESULTS 2022

**Leonardo George de Magalhães - CFO**

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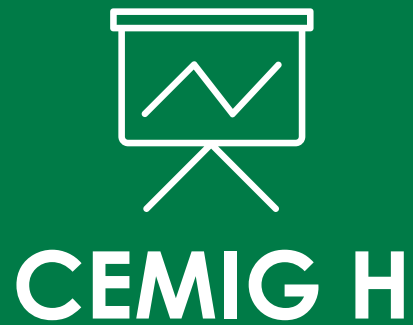
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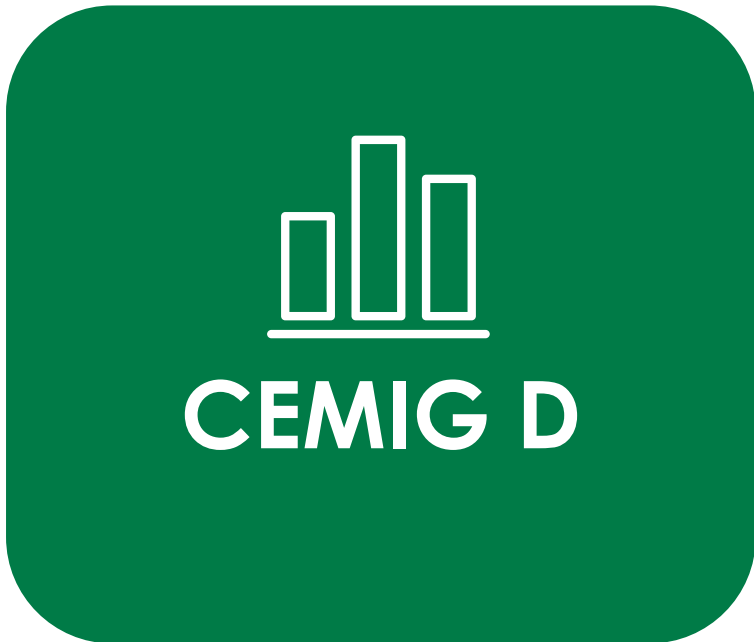


~30% of **Trading contracts** transferred from **Cemig GT** to **Cemig H**.



Outsourced-supplier energy contracts transferred in 2022

**Ebitda in 4Q22: R\$269 mn**  
**Ebitda in 2022: R\$721 mn**



**Operational efficiency and investments** translate into robust results in 2022



**Ebitda: R\$2.6 bn** (down 0.5% YoY)  
**Net Profit: R\$1.5 bn** (up 3.9% YoY – adjusted basis)

We reached an important milestone – Cemig now serves **9 million consumers**



Cemig's quality indicators demonstrate our commitment to **excellent** service:

**DEC: 9.48h**  
**FEC: 4.58**

\*DEC: average outage duration (hours)  
FEC: average outage frequency (times/year)



**Strong results**  
indicate  
assertiveness in  
decision-making



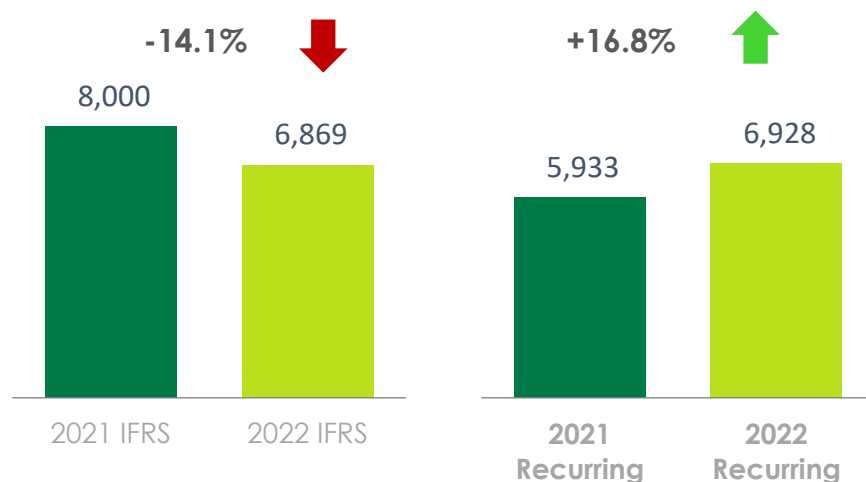
**Ebitda: R\$2.7 bn** (up 36.6% YoY)  
**Net Profit: R\$2.0 bn** (up 160.6% – adjusted basis)

**FX exposure** reduced by  
**U\$244 mn**  
Rating agencies recognize  
improved risk perception

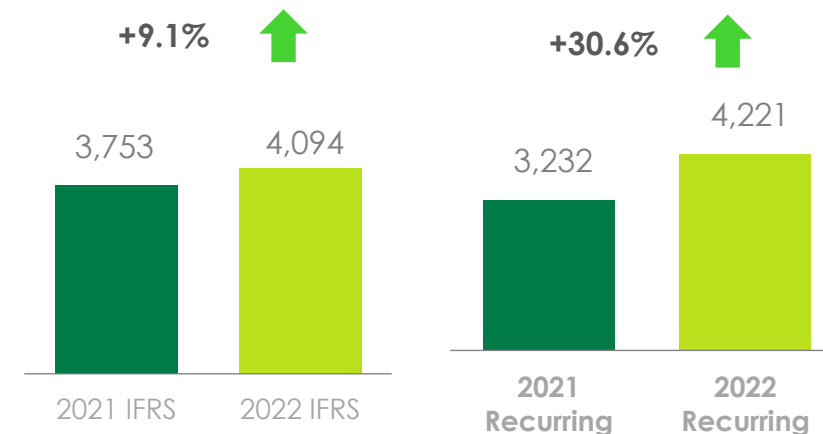


Our FX exposure is now  
**U\$756mn**, close to half the  
**U\$1.5bn** contracted in  
2017/2018

## Ebitda



## Net Profit



R\$ mn	EBITDA		PROFIT	
	2021	2022	2021	2022
<b>IFRS</b>	<b>8,000</b>	<b>6,869</b>	<b>3,753</b>	<b>4,094</b>
Provision – Credits of PIS/Pasep/Cofins taxes on ICMS - VA	-	830	-	548
MVE (Excess Supply Sale Mechanism)	-	-204	-	-144
Gains on renegotiation of hydrological risk	-1,340	-	-989	-
Other adjustments	-727	-567	-445	-374
FX exposure – Eurobond hedge	-	-	913	97
<b>RECURRING</b>	<b>5,933</b>	<b>6,928</b>	<b>3,232</b>	<b>4,221</b>

## CEMIG H

Transfer of third-party contracts to Cemig H.

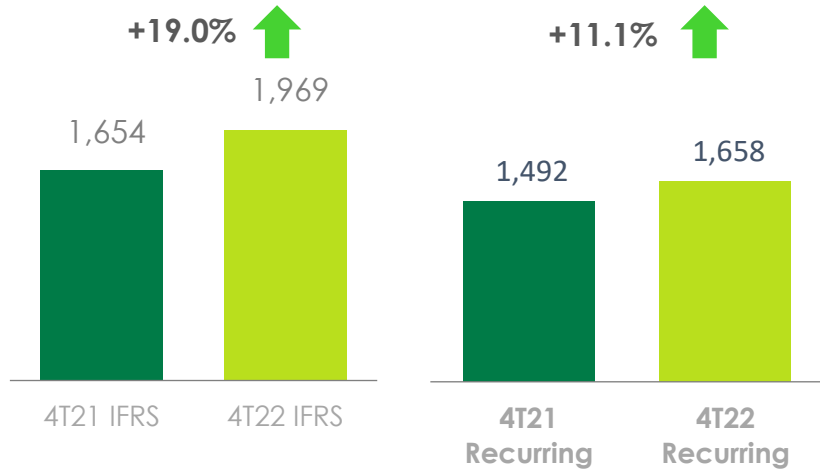
EBITDA

**R\$721 mn**

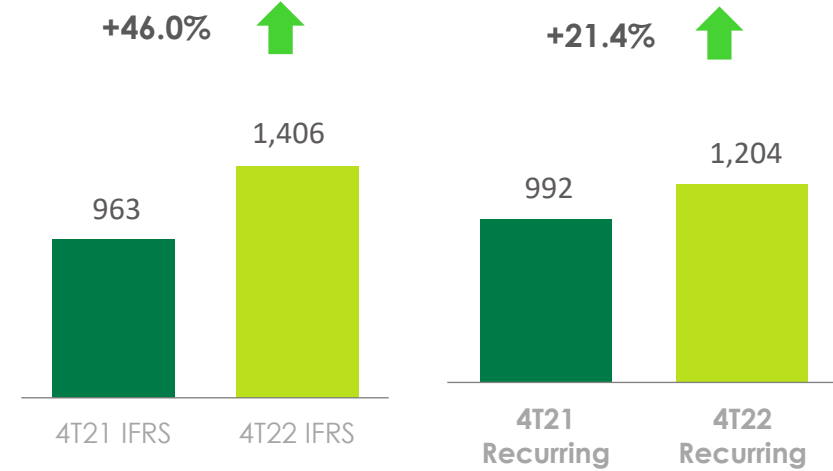
Net Profit

**R\$476 mn**

## Ebitda



## Net Profit



R\$ mn	EBITDA		PROFIT	
	4Q21	4Q22	4Q21	4Q22
<b>IFRS</b>	<b>1,654</b>	<b>1,969</b>	<b>963</b>	<b>1,406</b>
MVE (Excess Supply Sale Mechanism)	-	-204	-	-144
Write-down of post-retirement life insurance obligation	-415	-	-274	-
Other adjustments	253	-106	236	-70
FX exposure – Eurobond hedge	-	-	67	12
<b>RECURRING</b>	<b>1,492</b>	<b>1,658</b>	<b>992</b>	<b>1,204</b>

## CEMIG H

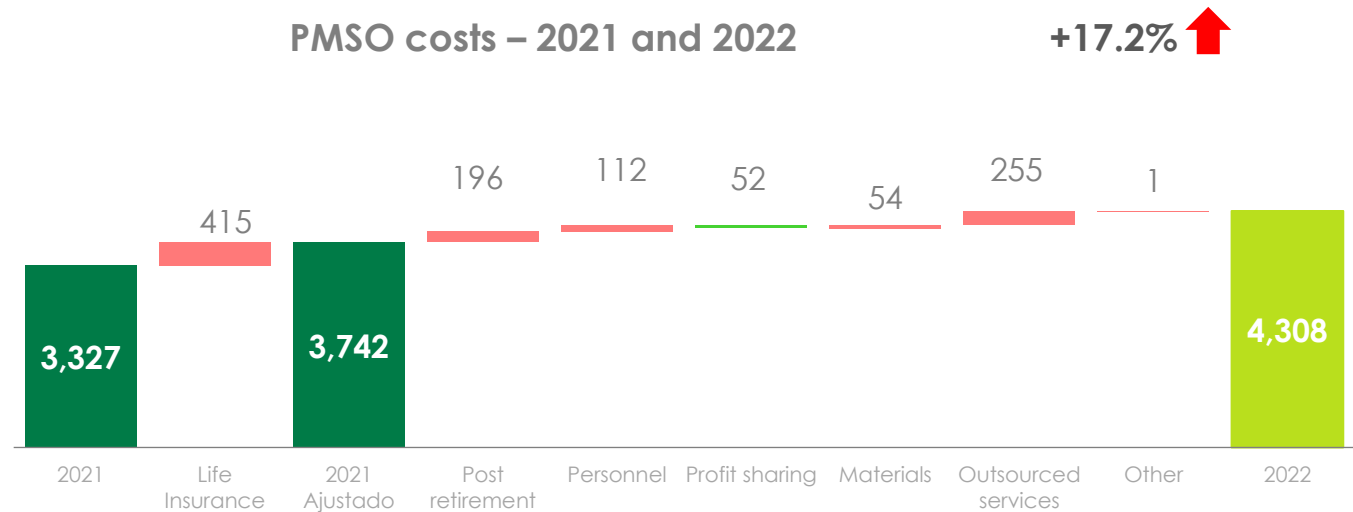
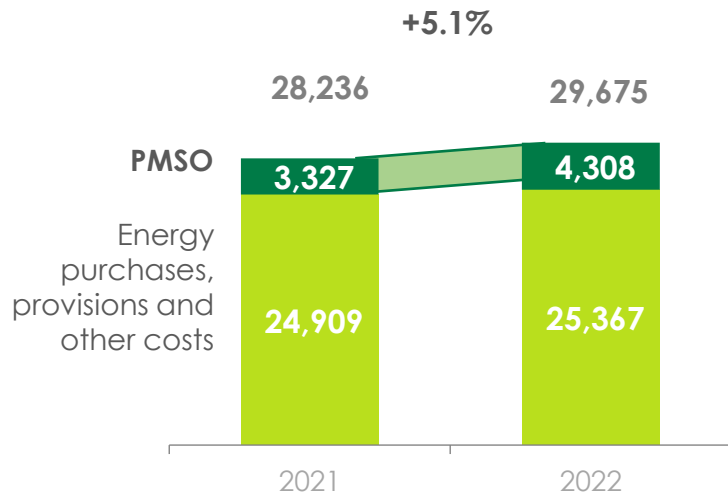
Transfer of third-party contracts to Cemig H.

EBITDA

**R\$269 mn**

Net Profit

**R\$177 mn**



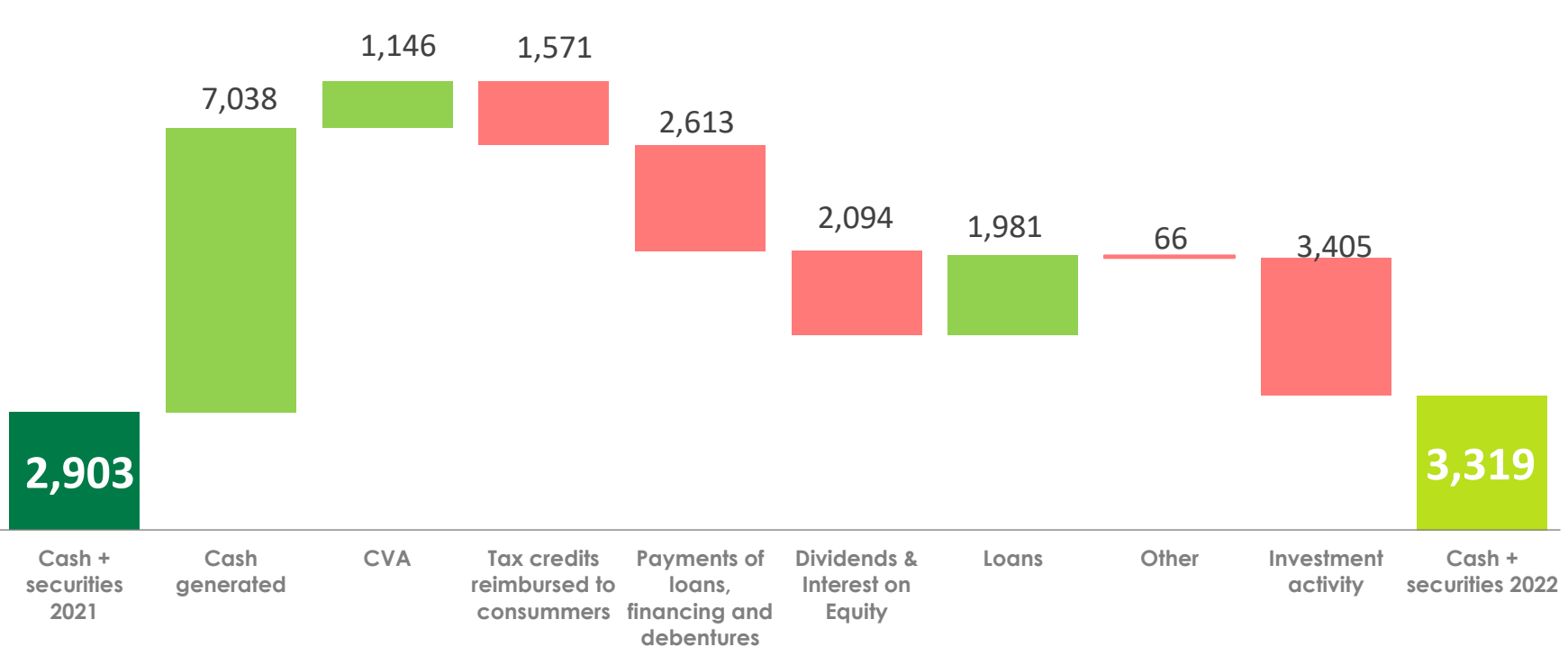
Increase in personnel expenses due to:

- 11.8% **salary adjustment** of 2021
- **PDVP** Voluntary Retirement Plan (cost R\$ 78 million)

**Cost of outsourced services 17.7% higher than in 2021**

- Greater investment in service quality:
- maintenance and conservation of equipment
  - communication with clients
  - increase in number of collection agents

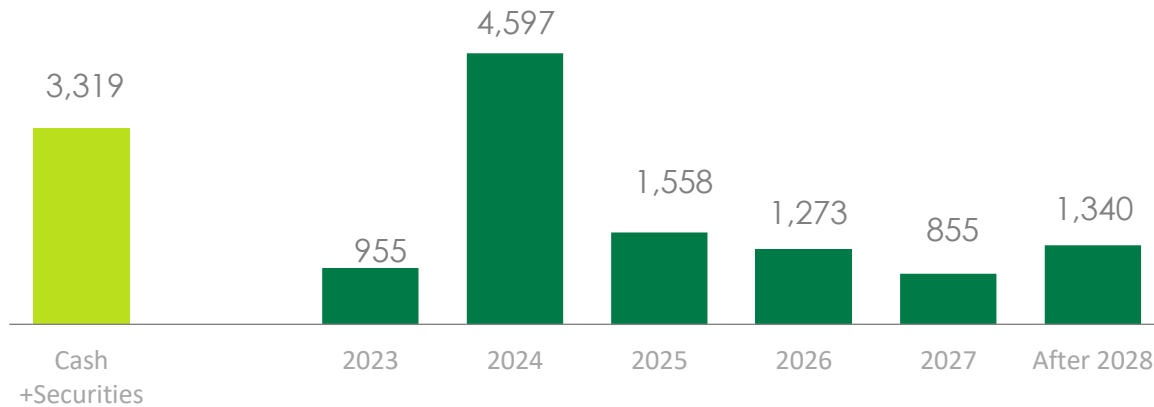




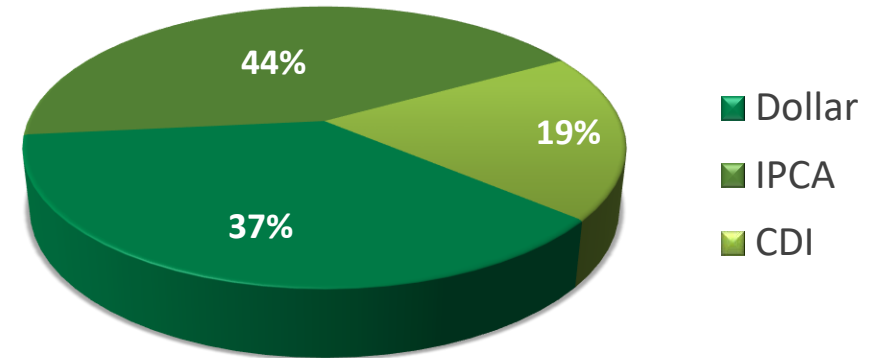
ROBUST CASH GENERATION  
 – SUSTAINS EXECUTION OF INVESTMENT PLAN  
 – ENSURES FUTURE LIQUIDITY

## Maturities timetable Average Term 3.2 years

Net debt (Debt – Cash and Securities): R\$7.3 Bn  
Total net debt (Net debt – Hedge): R\$6.6 Bn



## MAIN INDEX

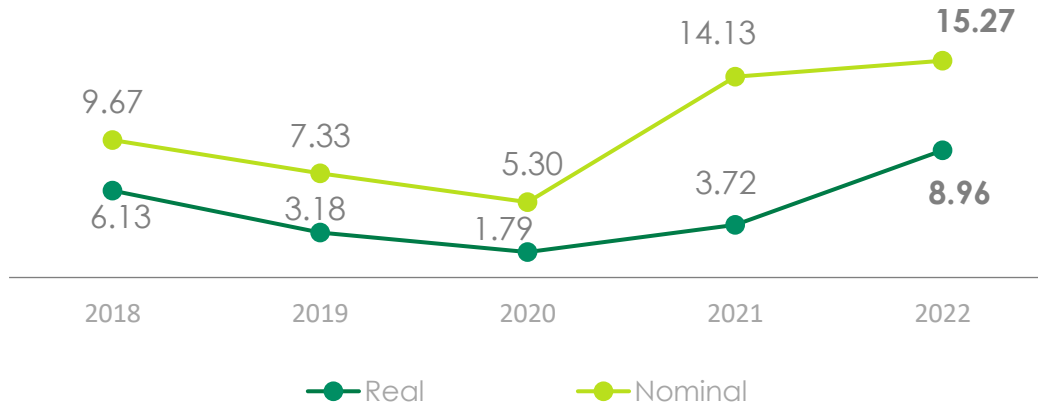


## RATINGS

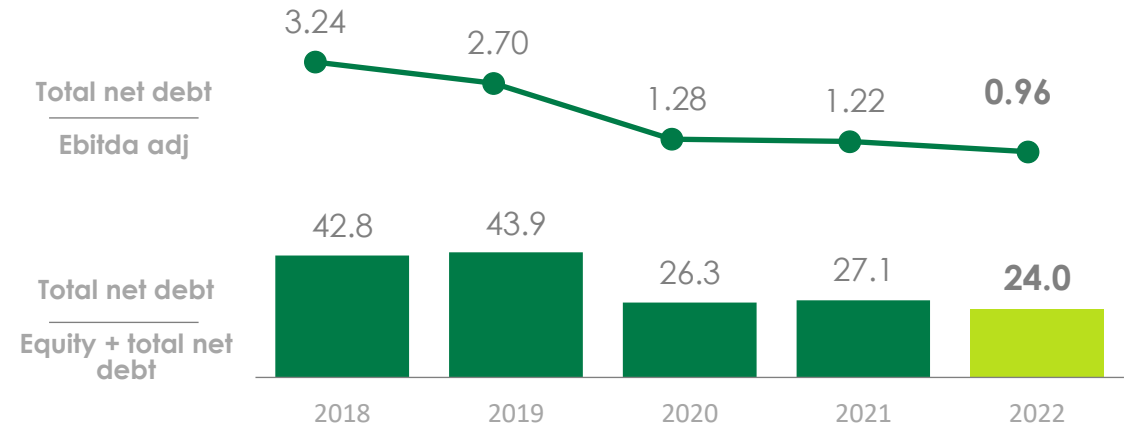


**Hedge of debt in USD:** Within FX variation band – converted to % of Brazilian CDI rate.

### DEBT COST ( % )



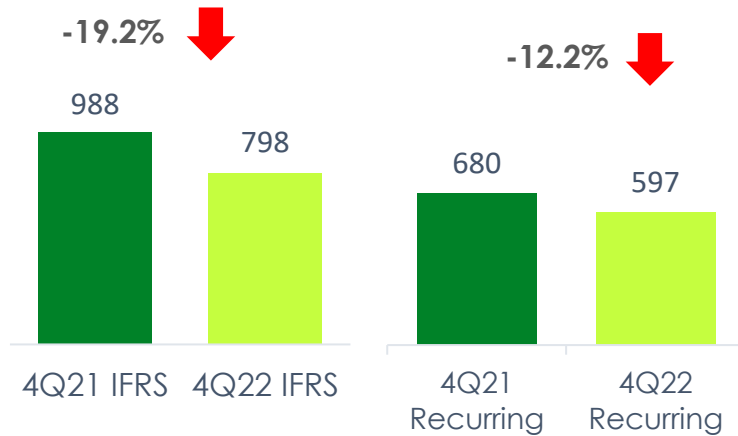
### LEVERAGE ( % )



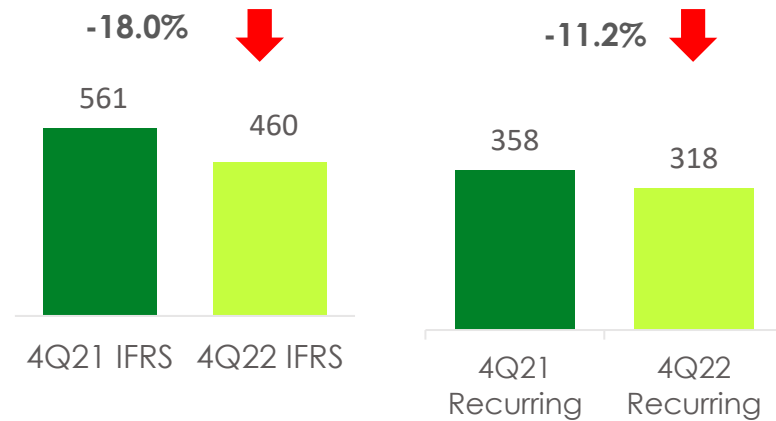
Lower **FX exposure** and **robust cash generation** keep **leverage** close to 1X

Results maintain market optimism on Cemig's financial solidity

## EBITDA



## NET PROFIT



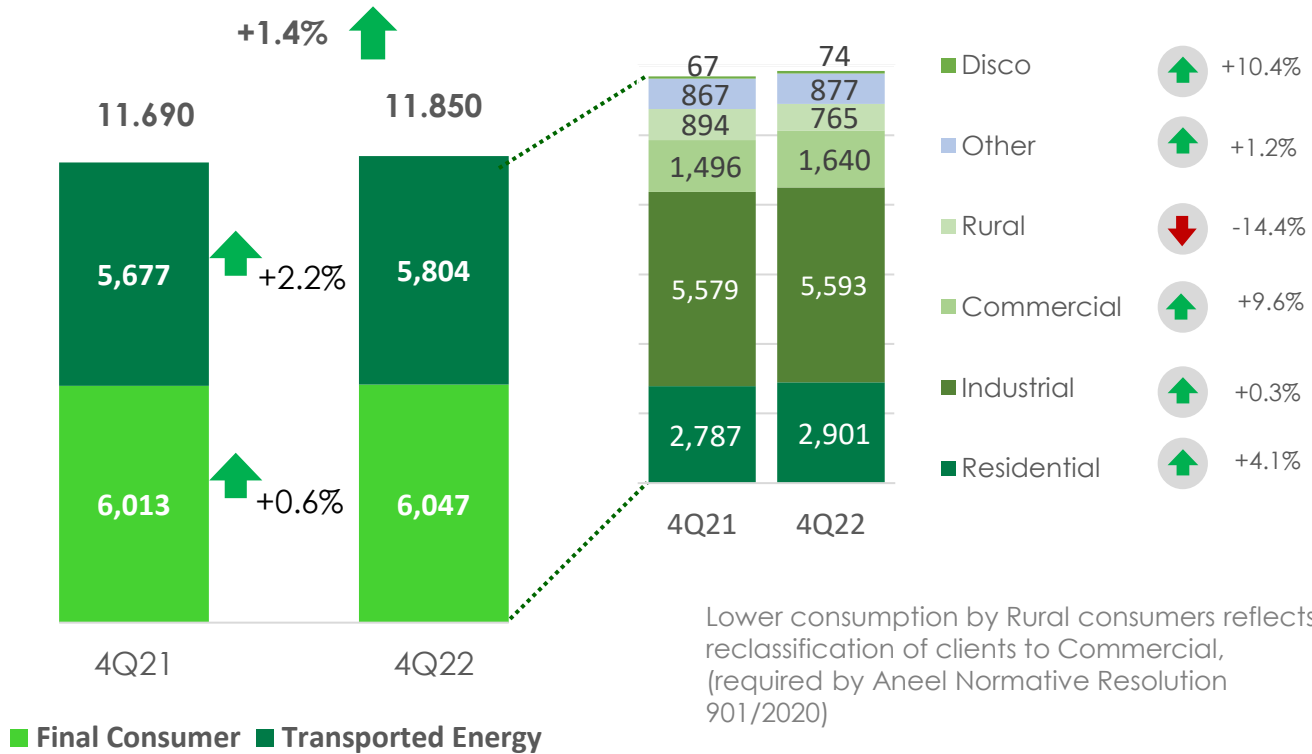
R\$ mn	EBITDA		Net Profit	
	4Q21	4Q22	4Q21	4Q22
<b>IFRS</b>	<b>988</b>	<b>798</b>	<b>561</b>	<b>460</b>
Write-down of post-retirement life insurance obligation	-309	-	-204	-
MVE (Excess Supply Sale Mechanism)	-	-204	-	-144
Other adjustments	-	3	-	2
<b>RECURRING</b>	<b>680</b>	<b>597</b>	<b>358</b>	<b>318</b>



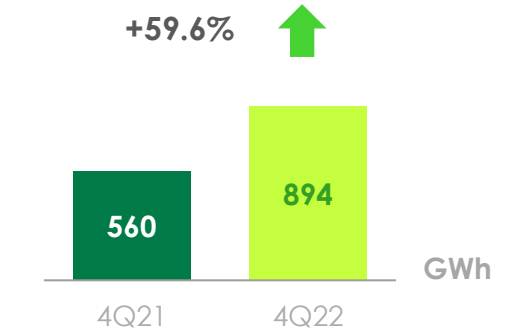
Excess Supply Sale Mechanism(MVE) guarantees extraordinary revenue for the distributor and contributes to the tariff modicity



## CEMIG D: BILLED MARKET + TRANSMISSION (GWh)



## Distributed Generation Energy injected

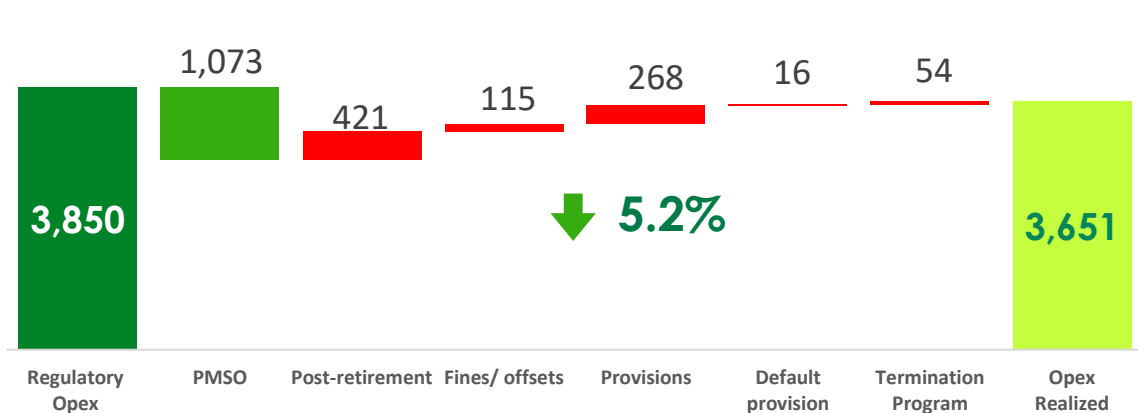


**6.4%**

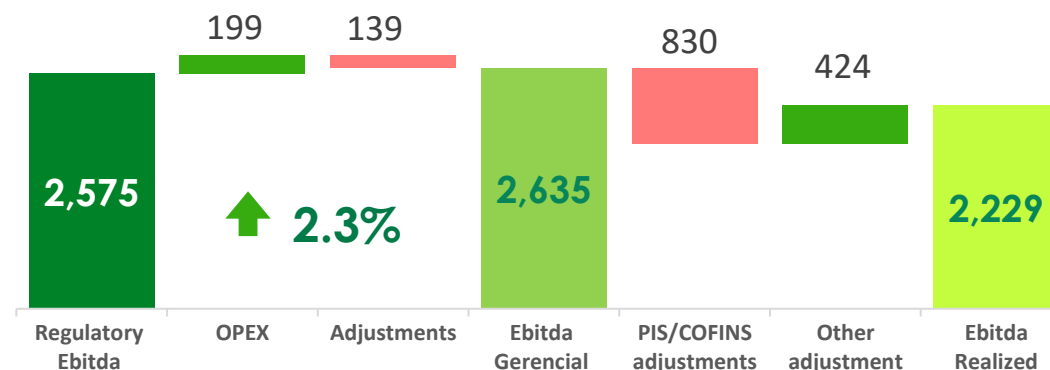
of the total energy consumed in Cemig D's concession area

Volume of energy distributed **1.4%** higher  
 – even with strong migration of captive clients to Distributed Generation

OPEX R\$mn



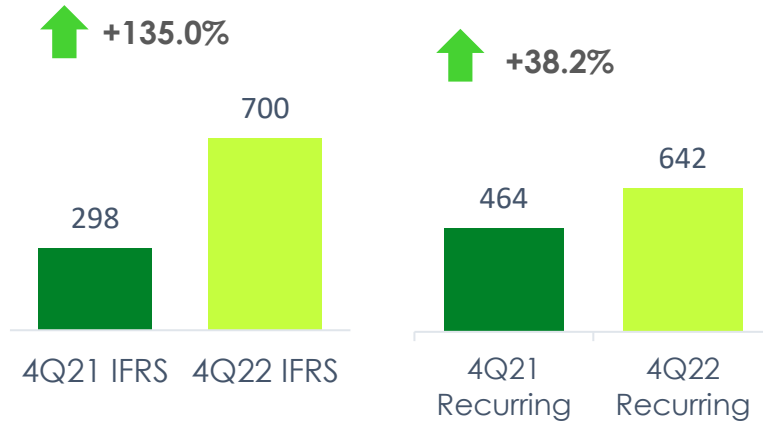
EBITDA R\$mn



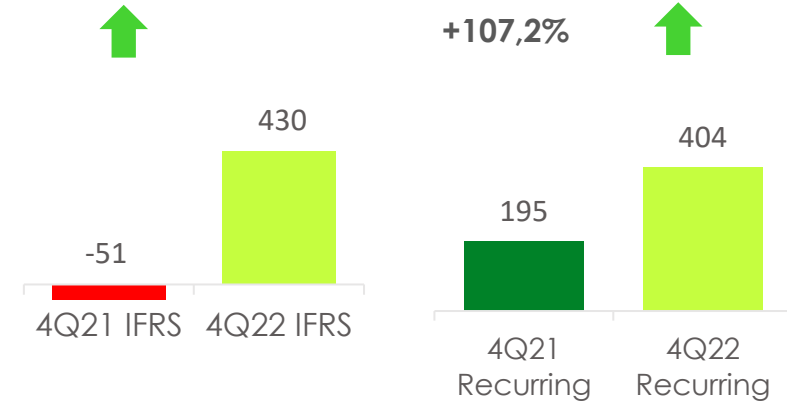
Keeping within regulatory limits – 100% coverage of total operational expenses.

- 2022 Opex: **R\$ 199 million** below the regulatory maximum
- 2022 Ebitda: **R\$ 60 million** above the regulatory minimum

## Ebitda



## Net Profit



R\$ mn	EBITDA		PROFIT	
	4Q21	4Q22	4Q21	4Q22
<b>IFRS</b>	<b>298</b>	<b>700</b>	<b>-51</b>	<b>430</b>
Gain from agreement between FIP Melbourne and AGPar	-	-28	-	-19
Adjustment for impairment of investments (Santo Antônio)	204	-	204	-
FX exposure – Eurobond hedge	-	-	67	12
Other adjustments	-38	-30	-25	-19
<b>RECURRING</b>	<b>464</b>	<b>642</b>	<b>195</b>	<b>404</b>

## CEMIG GT

Transfer of third-party contracts to Cemig H.

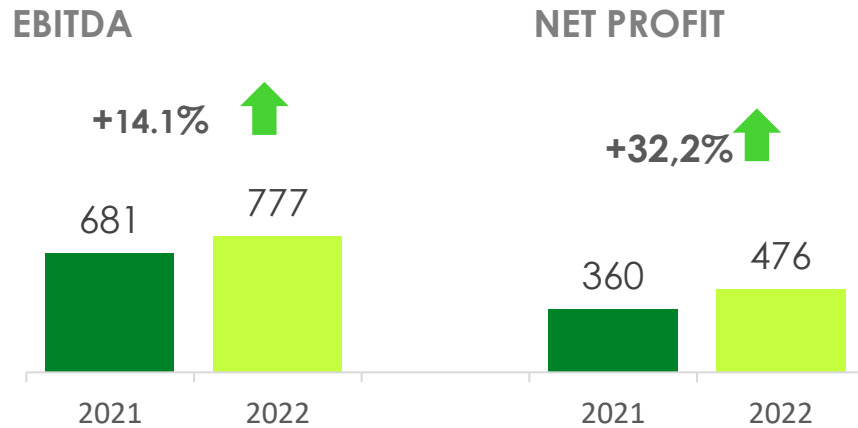
EBITDA

**R\$269 mn**

NET PROFIT

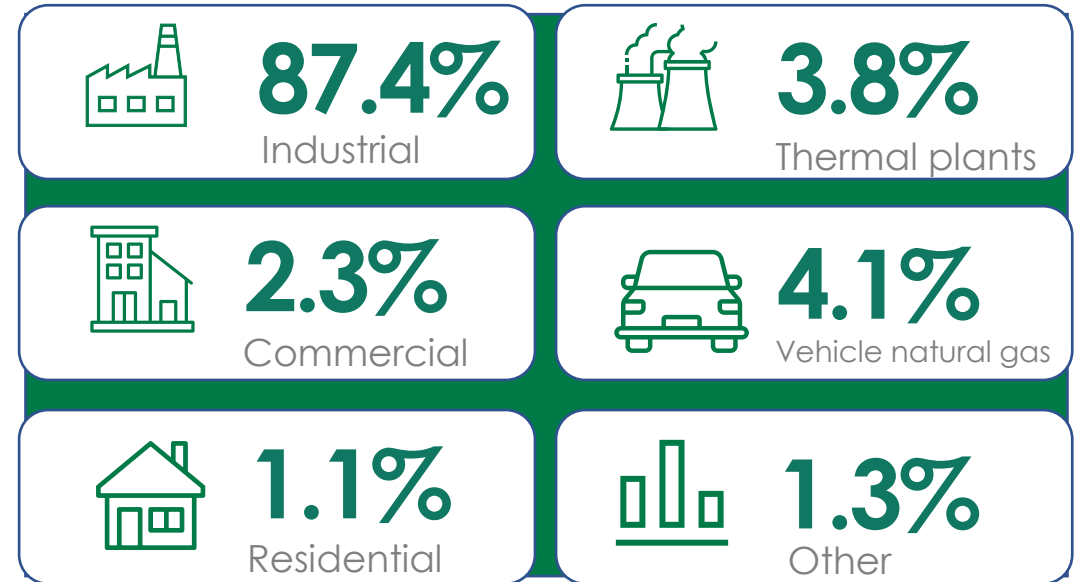
**R\$177 mn**

Ebitda up **14.1%** in 2022, in spite of volume sold to final consumers **27.1%** lower

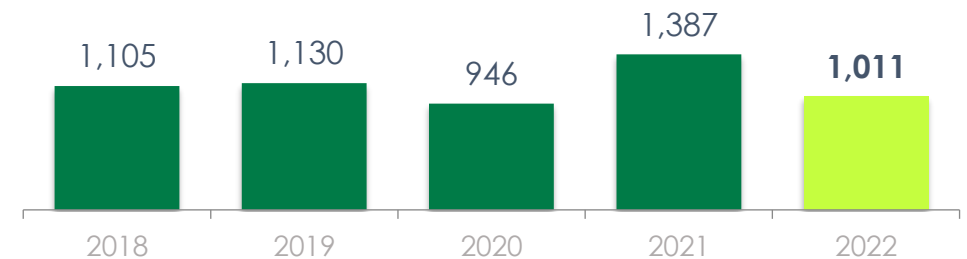


**2,8 million m<sup>3</sup>** Average volume per day

## SEGMENTS SERVED | % VOLUME M3



## Natural gas volumes sold | million m<sup>3</sup>





## Shareholder compensation among the highest in the sector

Our dividend policy, **payout de 50%**, provides adequate remuneration to our shareholders and allows us to execute our **Investment Plan**



The Board of Directors resolved to submit to the Annual General Meeting ("AGO") to be held in April 2023, the following proposal for allocation of net income for 2022.

For more details about record date, ex-dividend date, values per share, visit the IR website [DIVIDENDS - CEMIG RI](#)



**Marney Tadeu Antunes**  
**Chief Distribution Officer- DCD**

## STRATEGY



Focus on the **Client**

Optimize **revenue management**

Combat **losses**, improve **collection**,  
keep within regulatory parameters

Increase **operational efficiency**, applying  
innovative and technological solutions

Induce **market expansion** by **increased investments**

## LARGEST INVESTMENT IN CEMIG'S HISTORY



**CAPEX in 2018–2022: R\$ 7.2 billion**

### HIGH VOLTAGE



**R\$ 2.5 billion** – 64 substations (new stations + expansion), **1,800 km of lines**

### MEDIUM VOLTAGE



**R\$ 2.9 billion** – 118,000 works, connection of **>900,000** new clients and **194,000** new installations in **Distributed Generation**

### PROTECTION OF REVENUE



**R\$ 0.4 billion** – 235,000 smart meters, **substitution of 862,000** obsolete meters

### IMPROVEMENT OF NETWORKS



**R\$ 1.4 billion** – 18,500 reclosers, upgrading of **thousands of km of network**

## CAPEX in 2023–2027: R\$ 18.3 billion

### MINAS 3-PHASE PROGRAM

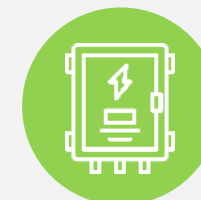


Conversion from single phase to 3-phase

**30,000 km**



Construction of **3,524 km** of distribution lines



**1,250,000** smart meters



'Low-voltage Zero':

**246,000** connections to combat losses



**MORE POWER** program:

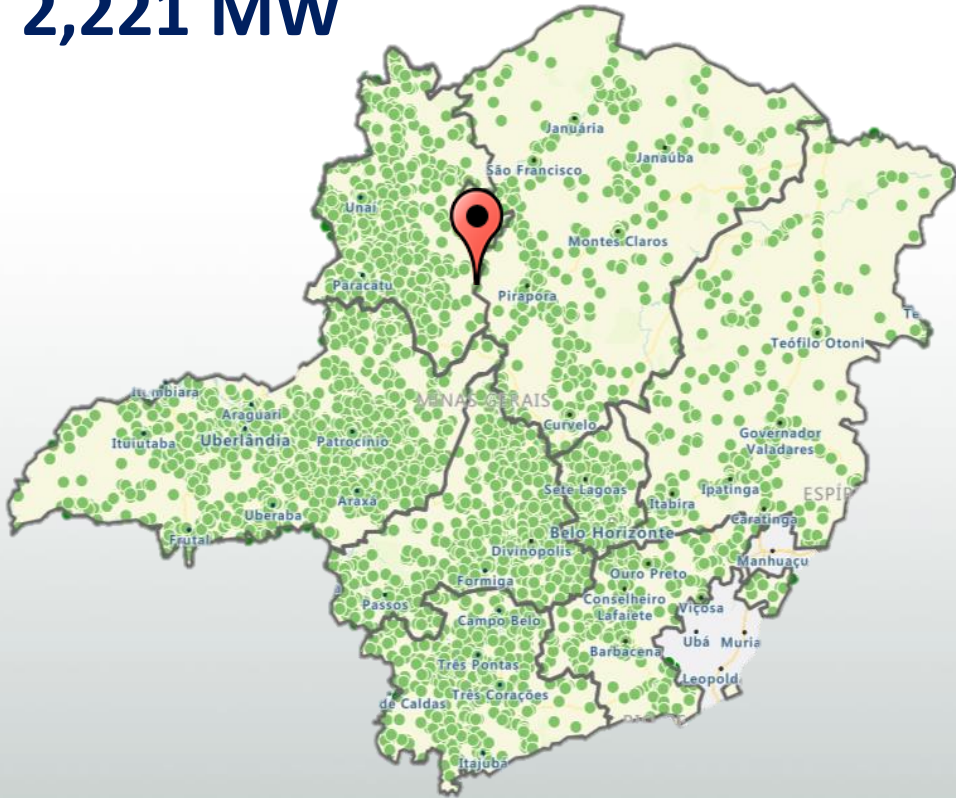
Construction of **136** Substations



New **structural works**, especially **new substations**, will ensure the ability to carry new load totaling **2,221 MW** in all the regions of the State

Connection of future loads in progress

**2,221 MW**



## Buritizeiro



### **DIESEL GENERATORS**

Client had a **group of diesel generators** to supply its demand.  
As well as the high cost to the client, this demand was not being met by Cemig.



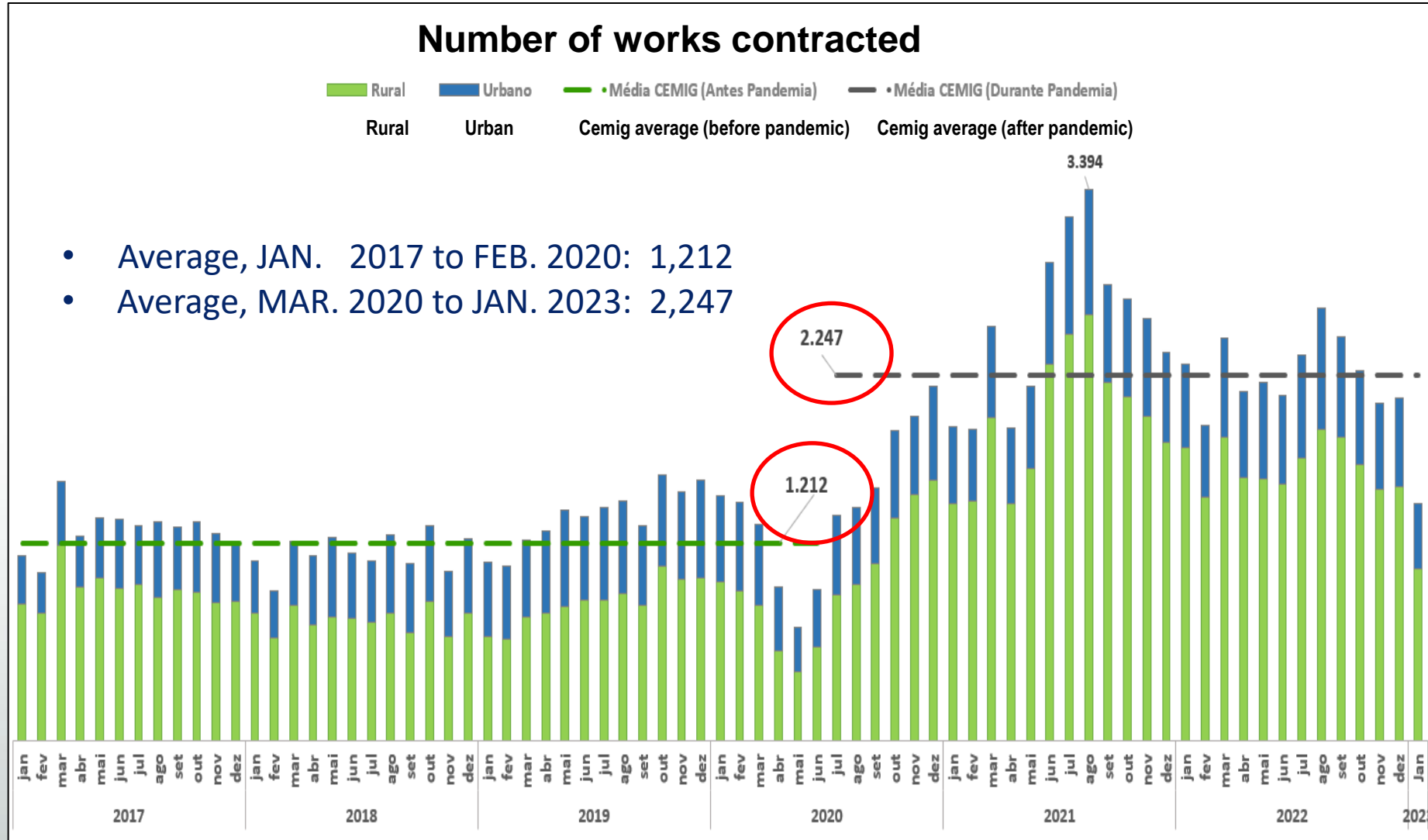
### **NEW SUBSTATION**

As from November 2022, this client is now served by a **NEW, 25 MVA, 138-34.5 kV SUBSTATION:**

**SE Buritizeiro 2**

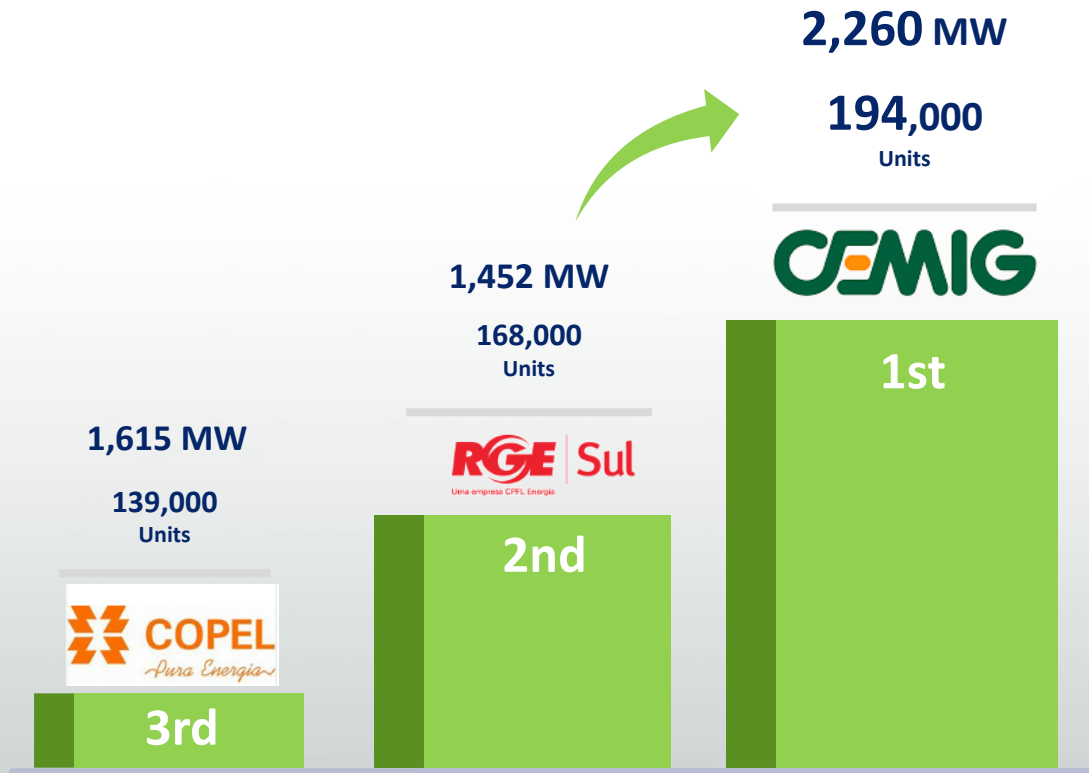
Demand: **4 MW.**

Orders per month almost doubled after start of the **pandemic**, especially from **rural** clients

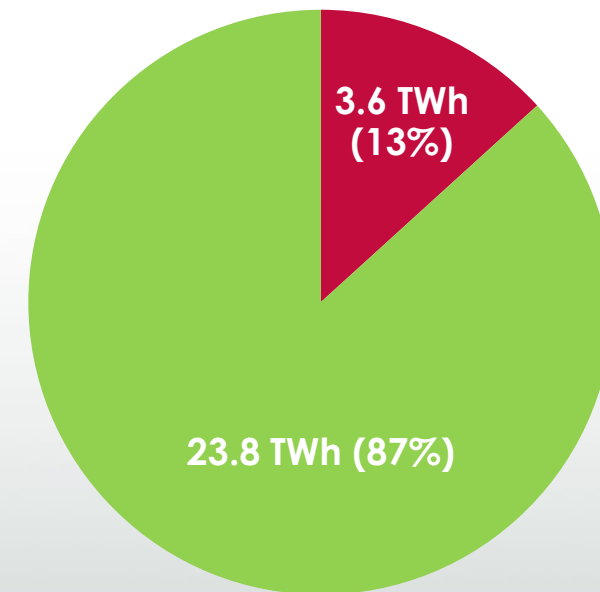


Cemig has the highest volume of **Distributed Generation** in Brazil

## DISTRIBUTED GENERATION



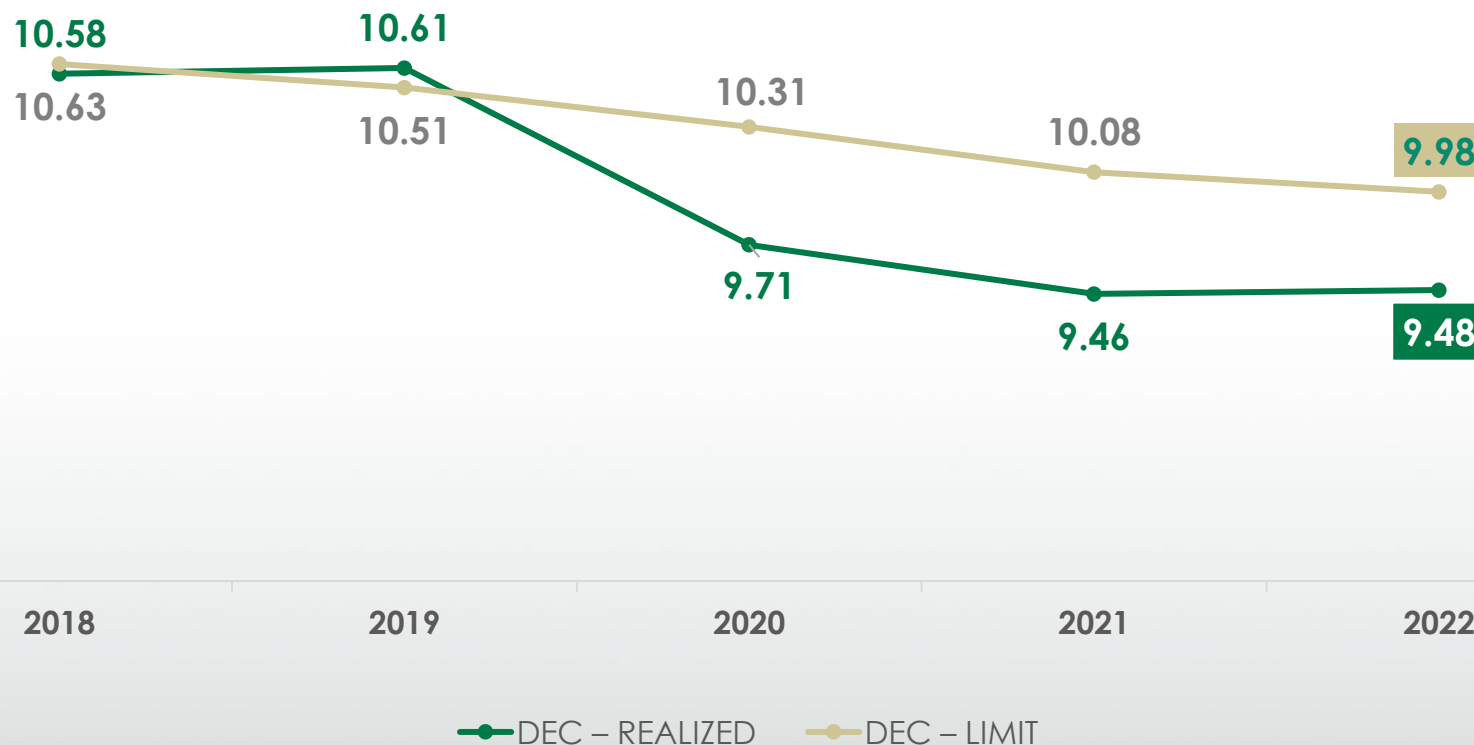
## Cemig D: Captive market in full year 2022 (%)



Cemig captive market



Average hours of outage per consumer

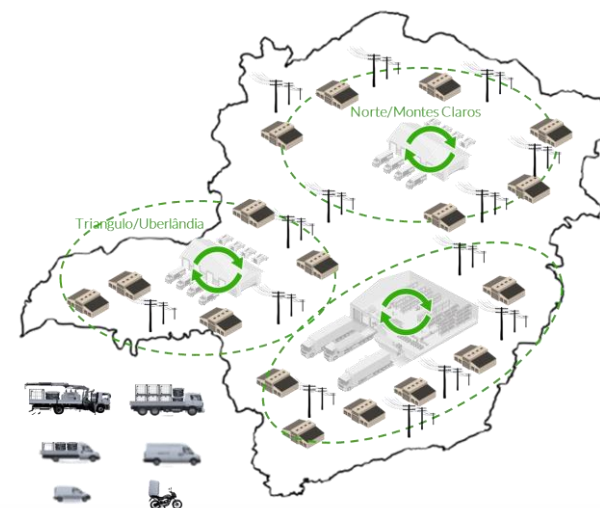


Energy supply  
99.9% of  
whole year

(DEC: Average Outage Duration per Consumer)

## Direct logistics

- **Inventory is closer | Haulage optimized**
- **Better service to clients:** More distribution centers, routes, integration
- **Lower inventory:** The right material, in the right quantity, at the right places



## Reverse logistics

- Network **complexity reduced**
- **Operator** responsible for **disposal**
- **Lower** stock of **scrap**

How it was

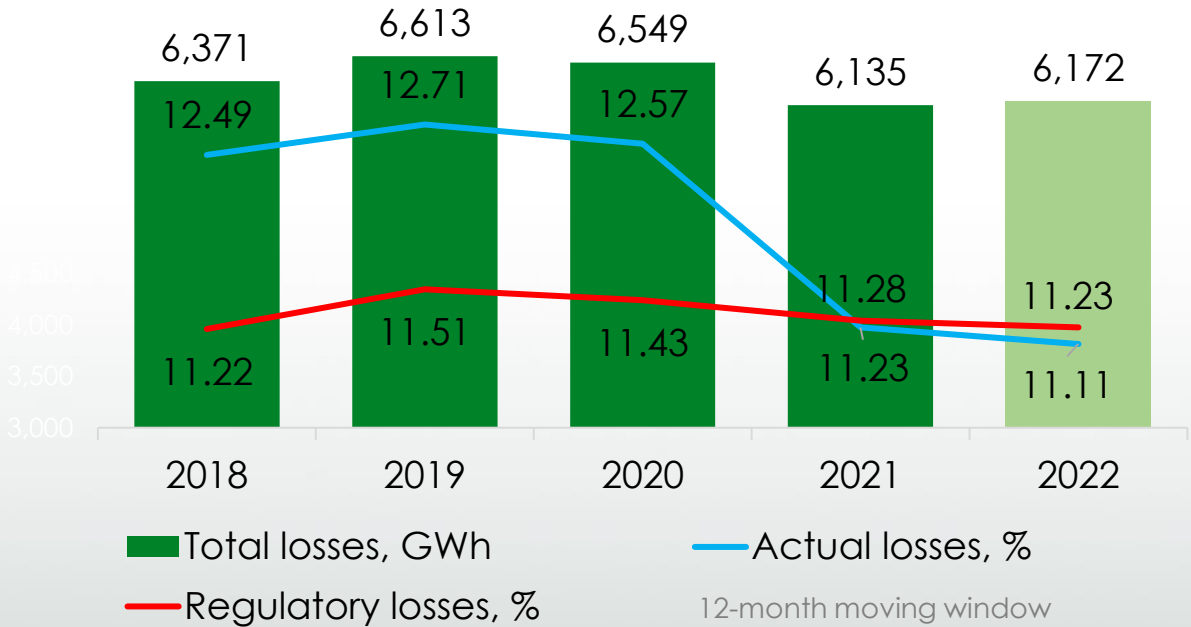


How it is



Actions of our **Energy Recovery Plan** have kept **energy losses** below the regulatory limits for the second year running

TOTAL ENERGY LOSSES

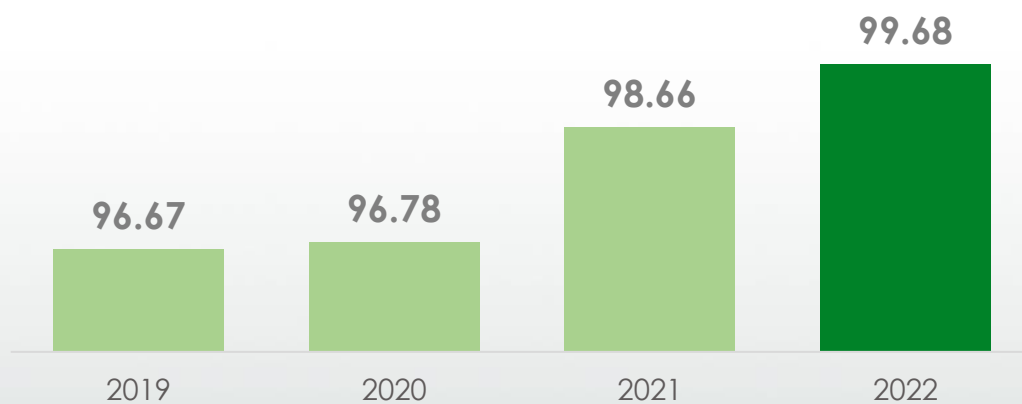


### Main initiatives (2022)

- ✓ **401,000** client inspections
- ✓ **862,000** obsolete meters replaced
- ✓ **235,000** conventional meters replaced by smart meters
- ✓ **4,300** clandestine connections regularized

Commitment to **keep energy losses** within **regulatory limits**

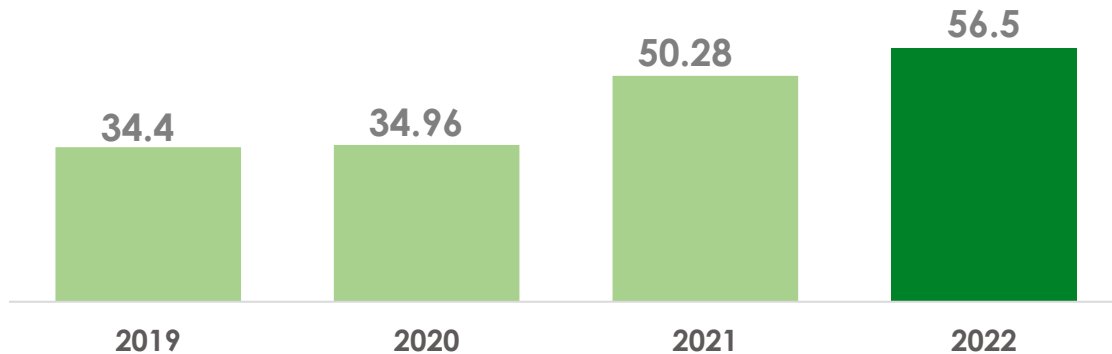
## RECEIVABLES COLLECTION INDEX (ARFA) (Collection / Billing, %)



Our **Collection/Billing ('ARFA') index** rose to a new annual record of **99.68%**, strengthened by clients migrating to **online payment methods**

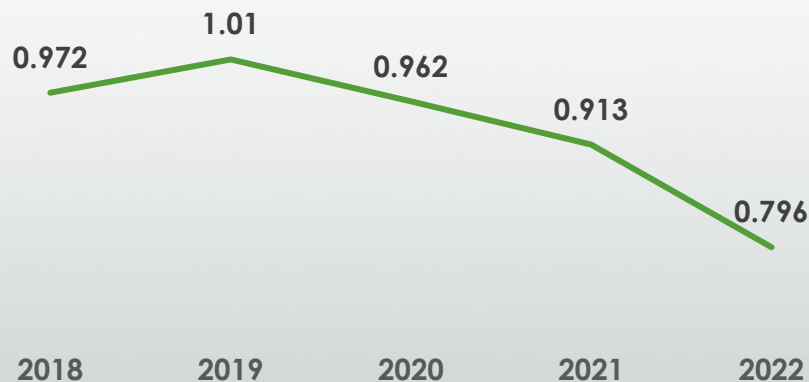
## COLLECTION – DIGITAL CHANNELS (%)

PIX, credit card, apps, automatic direct debit, terminals, other media



## COLLECTION – AVERAGE TARIFF (R\$)

How the average has changed – per client billed and collected



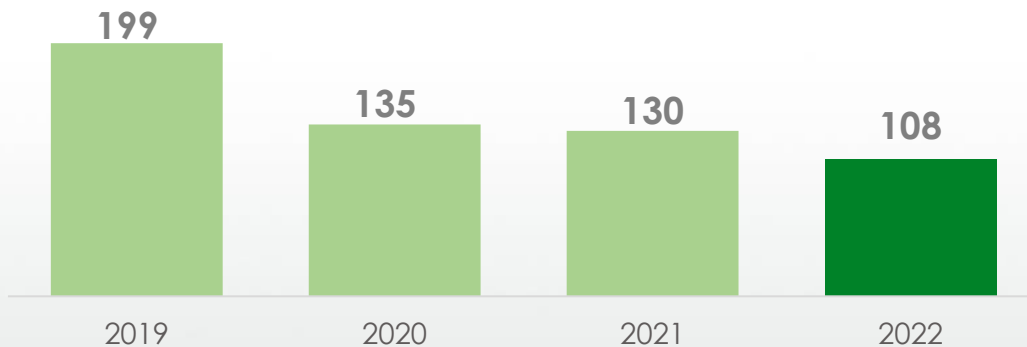
**Change in clients' payment behavior** – motivated by the Company's incentive campaigns and its making new channels for payment available

**OPEX:** Cost of collection operations was **10.5% (R\$ 9.0 mn) lower** in 2022 than 2021

The **PIX** nationwide instant payment system, first made available in May 2021, is now already **12,8%** of all collection (Feb. 2023).

## ESTIMATED TOTAL CLIENT DEFAULT PROVISION (R\$ MN)

Supply of electricity and use of network



Default provision reduced – main reasons:

Strengthening of collection activities: **20% increase** from 2021

Improvement in calculation criteria (good market practices, evolution of collection criteria via Machine Learning);



Billing collected for irregular consumption in prior periods generated revenue of **R\$ 104.4 mm (up 29% from 2021)**

## Initiatives planned for 2023

- Campaign for payment by **PIX; digital invoicing**
- **Past due notification** by **WhatsApp** and the *Cemig Atende* app
- **2 million** temporary disconnections of supply for **default**
- **80,000** remote suspensions via **smart meters**
- **6 million Serasa** and **SCPC** credit registry postings, or notary's-office protests
- Campaigns for **renegotiation of debts**
- **Regularization** of the debt of **Public authorities and hospitals**, together with Energy Efficiency actions
- **Credit cards** accepted for past due debts (bulletproofing our credit risk)
- Expansion of the **Social (low-income) Tariff**



**Thadeu Carneiro da Silva**  
**Chief Generation and Transmission**  
**Officer - DGT**





- **The DGT portfolio**
- Outlook for the Brazilian power sector
- Opportunities and initiatives of CEMIG GT

## Generation

3.3 GW

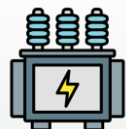


53

2

2

## Transmission



47

substations



5,000 km

### Key

Wholly-owned SPCs – hydroelectric

Wholly-owned SPCs – Wind plants

Wholly-owned SPCs – Transmission






Affiliates and subsidiaries

## Cemig Generation and Transmission

Cemig Ger. Três Marias S.A.	100%	100%	Praias do Parajuru
Cemig Ger. Salto Grande	100%	100%	Volta do Rio
Cemig Ger. Itutinga	100%	100%	Centroeste
Cemig Ger. Camargos	100%	100%	SLTE
Cemig Ger. Leste	100%	82.5%	CEB Consortium - Queimado
Cemig Ger. Oeste	100%	49%	Cachoeirão
Cemig Ger. Sul	100%	49%	Pipoca
Sá Carvalho	100%	49%	Guanhães
Rosal Energia	100%	49%	Paracambi
Cemig PCH	100%	69.4%	Baguari Energia
Horizontes Energia	100%	49%	Itaocara
Cemig Ger. Poço Fundo	100%		

- The DGT portfolio
- **Outlook for the Brazilian power sector**
- Opportunities and initiatives of CEMIG GT

The power sector is undergoing transformations

-  1 The energy transition
-  2 Metering – a technology revolution
-  3 New entrants and business models
-  4 Reinvention of traditional utilities
-  5 Evolution of regulation



... with multiple direct implications for Brazil and for Cemig

Expansion of sources – based on wind and solar

Storage

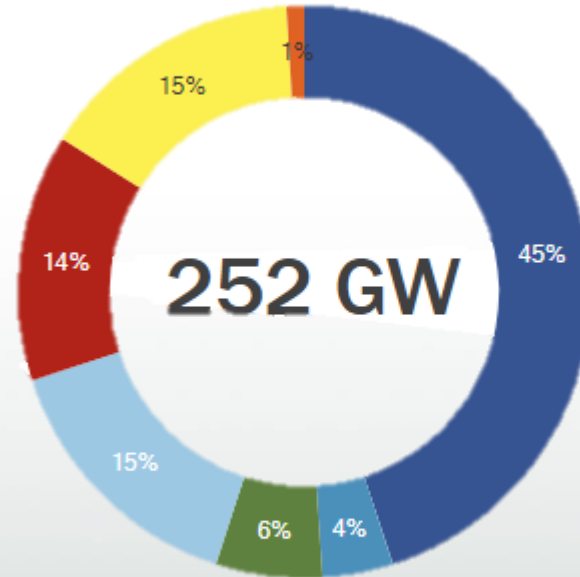
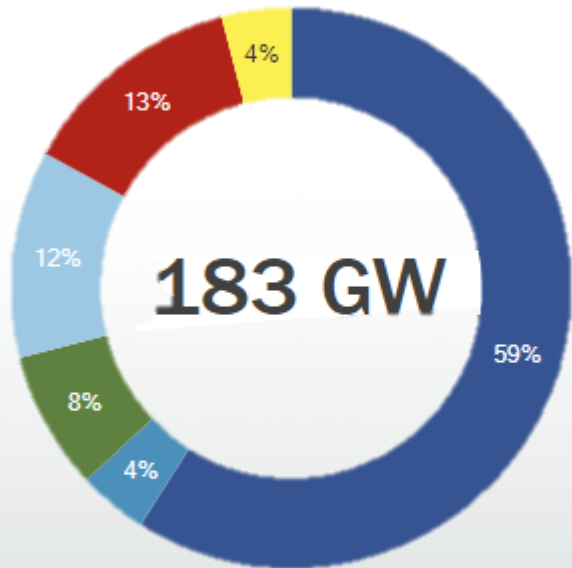
Digitalization

Empowering the client

Exponential growth in solar DG

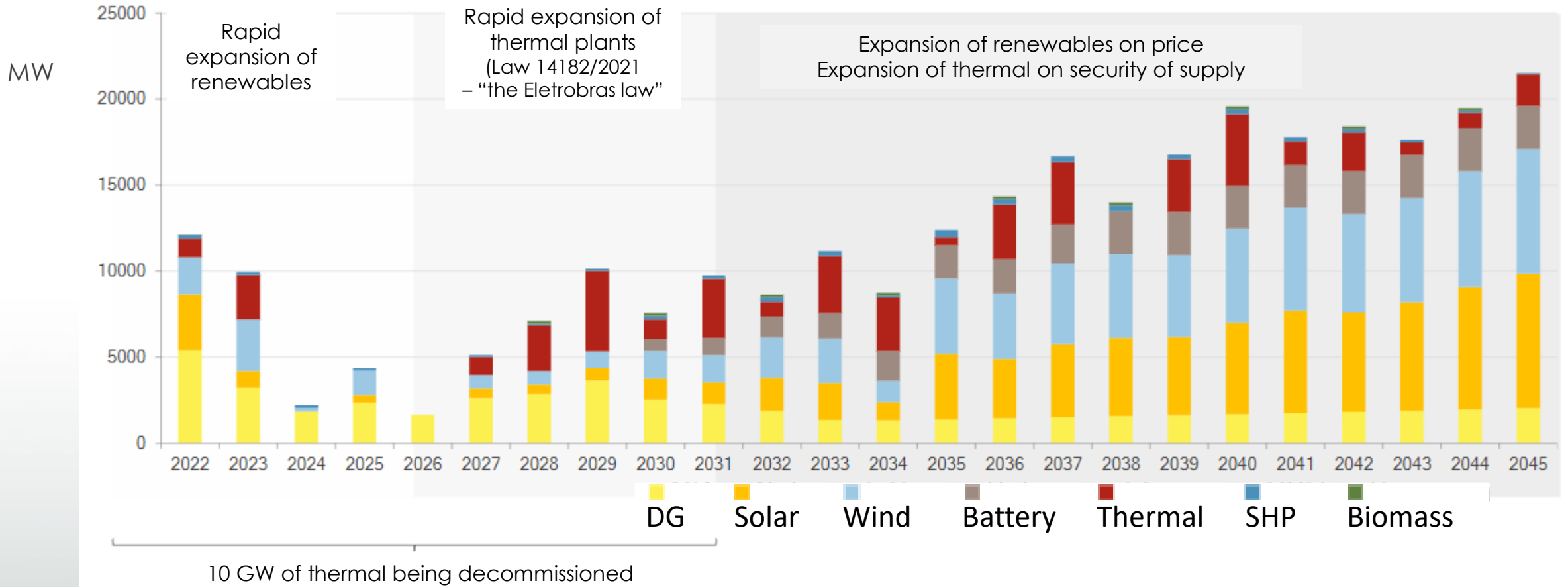
Electrification (e.g. electric vehicles)

# Expansion of the generation supply base



- Expansion of the generation supply base in the coming years is based on **alternative sources**, especially solar (Mini and Micro DG) and wind, and also a larger contribution from thermoelectric.
- Projections indicate **growth** in the generation base of **more than 30%** in the next 10 years.

# EXPANSION OF GENERATION BASE



Sources: Aneel, Thyos Energia.



- The DGT portfolio
- Outlook for the Brazilian power sector
- **Opportunities and initiatives of CEMIG GT**

As well as the **established technologies**

– hydroelectric, photovoltaic and onshore wind –  
Cemig is attentive to the world trends in energy:

- Integrated Energy Solutions
  - Hybridization, Association
- The Capacity Market
- Green H<sub>2</sub>
- Offshore wind





## Hybridization and Association

Based on Aneel Normative Resolution (REN) 954/2021, structuring of associations of solar plants with the hydroelectric plants for which Cemig GT has concessions is at the study phase. The main projects are:

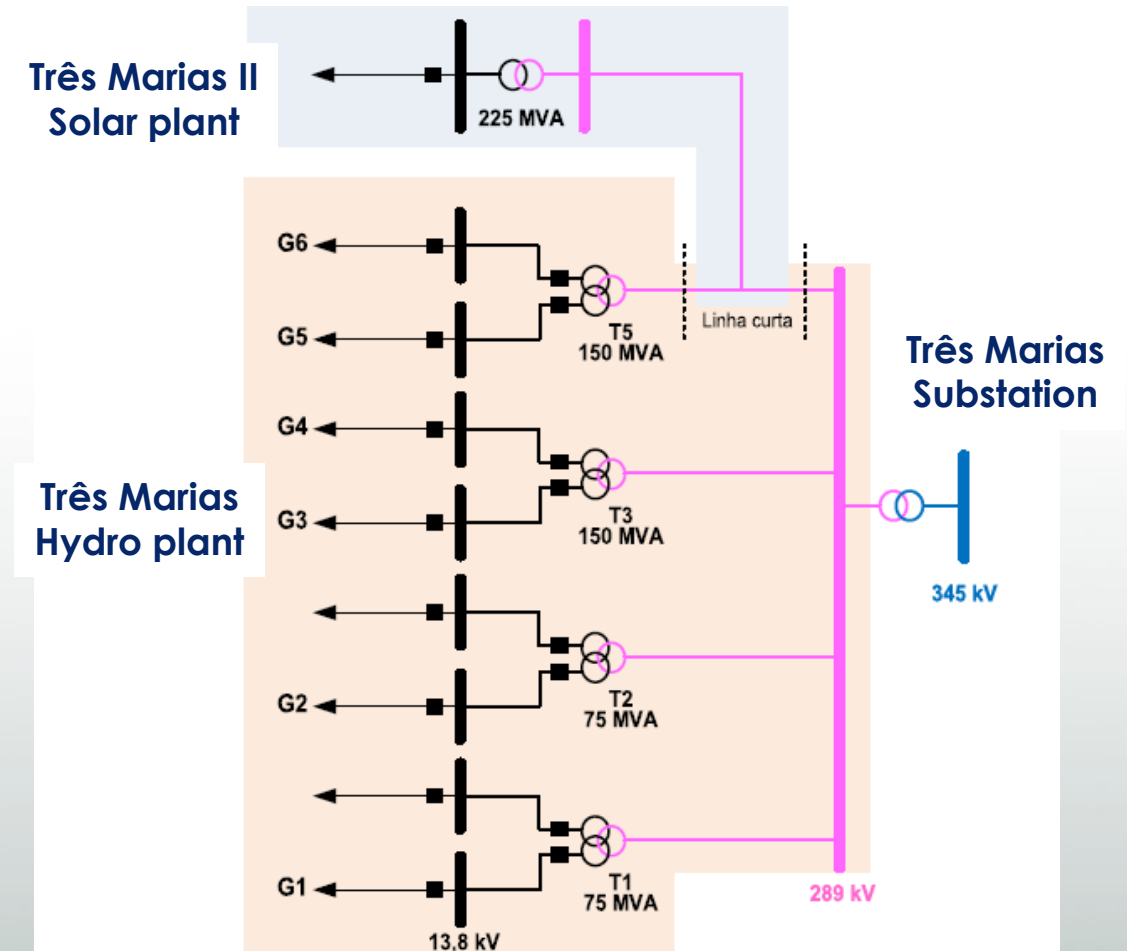
- Três Marias (information on access viability)
- Nova Ponte
- Emborcação
- Irapé



Shared connection structure between a solar and a hydroelectric plant, using spare capacity of the hydroelectric plant for outflow:

- this would also plan to contract zero MUST (commitment to specified predicted demand) for the solar plant.

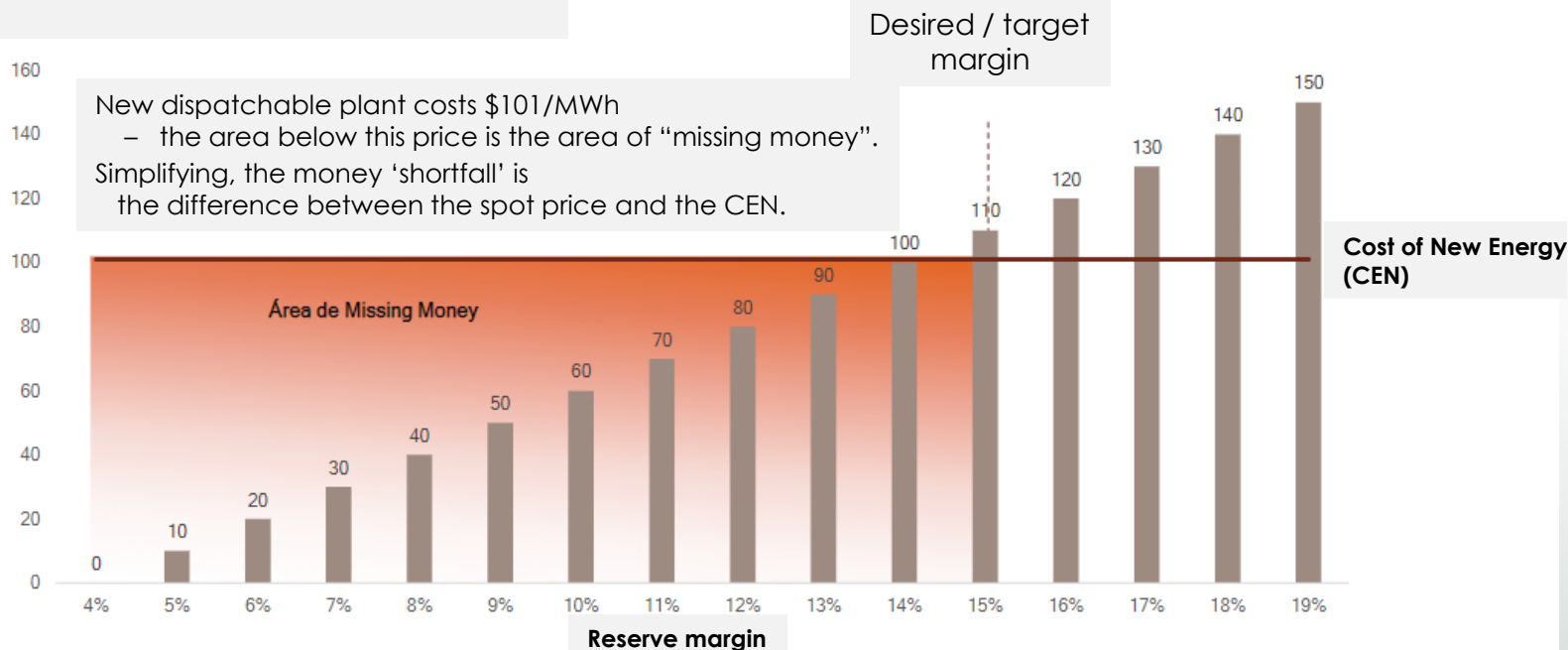
Simplified diagram of proposed connection at the Três Marias 289kV substation for association between the Três Marias hydroelectric plant and the Três Marias II photovoltaic plant:



This market was created by Law 14120/2021 as a way to guide expansion to renewable sources.

## “Missing Money” effect

Examples of spot prices and reliability margin  
\$MWh



Cemig is attentive to the opportunities, with the following studies:

- Additional generation units at the Três Marias hydroelectric plant.
- Development of thermoelectric projects for Reserve Capacity Auctions
- Plan and development studies for Reversible Plants (Pumped Storage)
- Maximizing value of the reservoirs

Source: Thymos Energia.



**Cemig** has signed a **Memorandum of Understanding** with **UNIFEI** for research and development projects (under the Aneel R&D system).



New opportunities for **business in Green Hydrogen** are being prospected, taking advantage of the synergy with **Gasmig**, and its capillary reach within the state of Minas Gerais.



The cornerstone of the Green Hydrogen Laboratory of the Central Campus of UNIFEI (at Itajubá, Minas Gerais) has been laid.

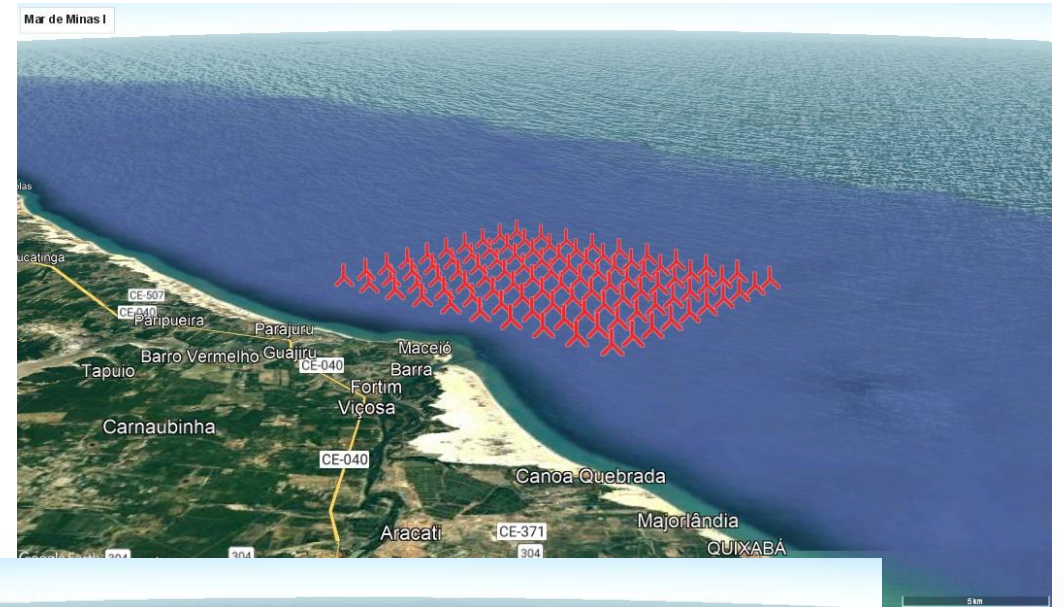
- Cemig GT has begun environmental studies for construction of two wind farms off the coast of the state of Ceará: **Mar de Minas I (1.5 GW) and Mar de Minas II (3.0 GW)**
- Together with other entrepreneurs, Cemig is working on developing specific legislation for offshore wind plants.

## Mar de Minas I

- **Total installed generation capacity:** 1.5 GW
- **Aerogenerators:** 100 WTGs of 15 MW each
- **Location:** Coast of Parajuru – Ceará State

## Mar de Minas II

- **Total installed generation capacity:** 3.0 GW
- **Aerogenerators:** 200 WTGs of 15 MW each
- **Location:** Coast of Trairi – Ceará State

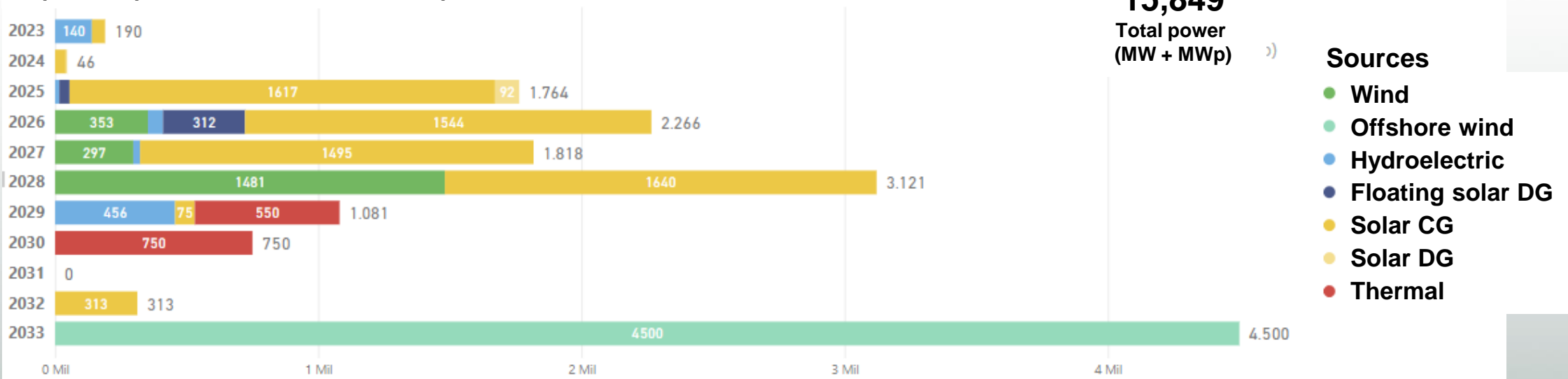


## Present portfolio of generation investments



Status	Source	Qty	Installed capacity [MW / MWp]	Approximate Offtake guarantee [MW average]
In development	Wind	7	6,631	3,675
	Solar	26	6,948	1,613
	Hydro	8	508	340
	Thermal	2	1,300	1,019
Approved	Solar	5	462	44
<b>Total</b>		<b>48</b>	<b>15,849</b>	<b>6,691</b>

Expected operation start dates – Whole portfolio



## Portfolio of investments in transmission

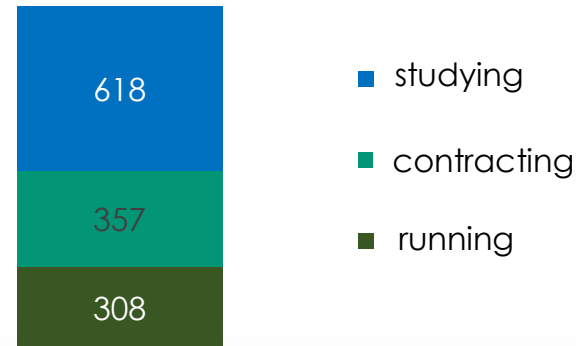
### Straightening and enhancement

- Investments focused on updating and modernization of assets, enabling increased in **BRR**
- **26 projects** currently being installed in Minas Gerais state
- Investments between R\$500/R\$600 mn/Year

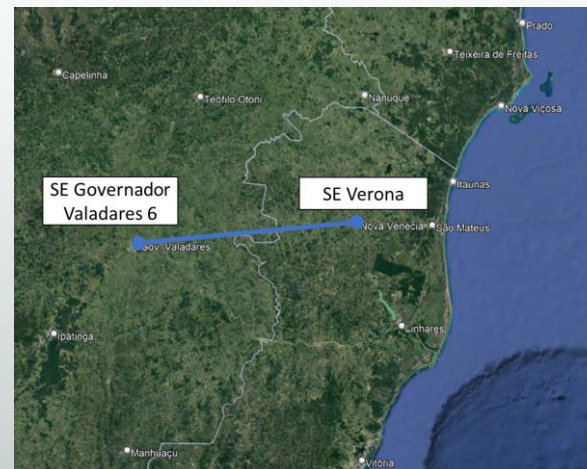
### Expansion

- **Cemig GT won Lot 1** of Aneel Auction 2/2022: construction of the **165km** 230kV transmission line connecting the Governador Valadares 6 substation (in Minas Gerais) to the Verona substation (in Espírito Santo).
- Aneel estimated capex: **R\$ 119 mn**
- Deadline for completion: 60 months
- Date for signature of concession contract: March 30, 2023

Investment in updating and modernization (R\$ x mn)



**Barreiro Substation (1)**  
Investment of R\$ 115 million



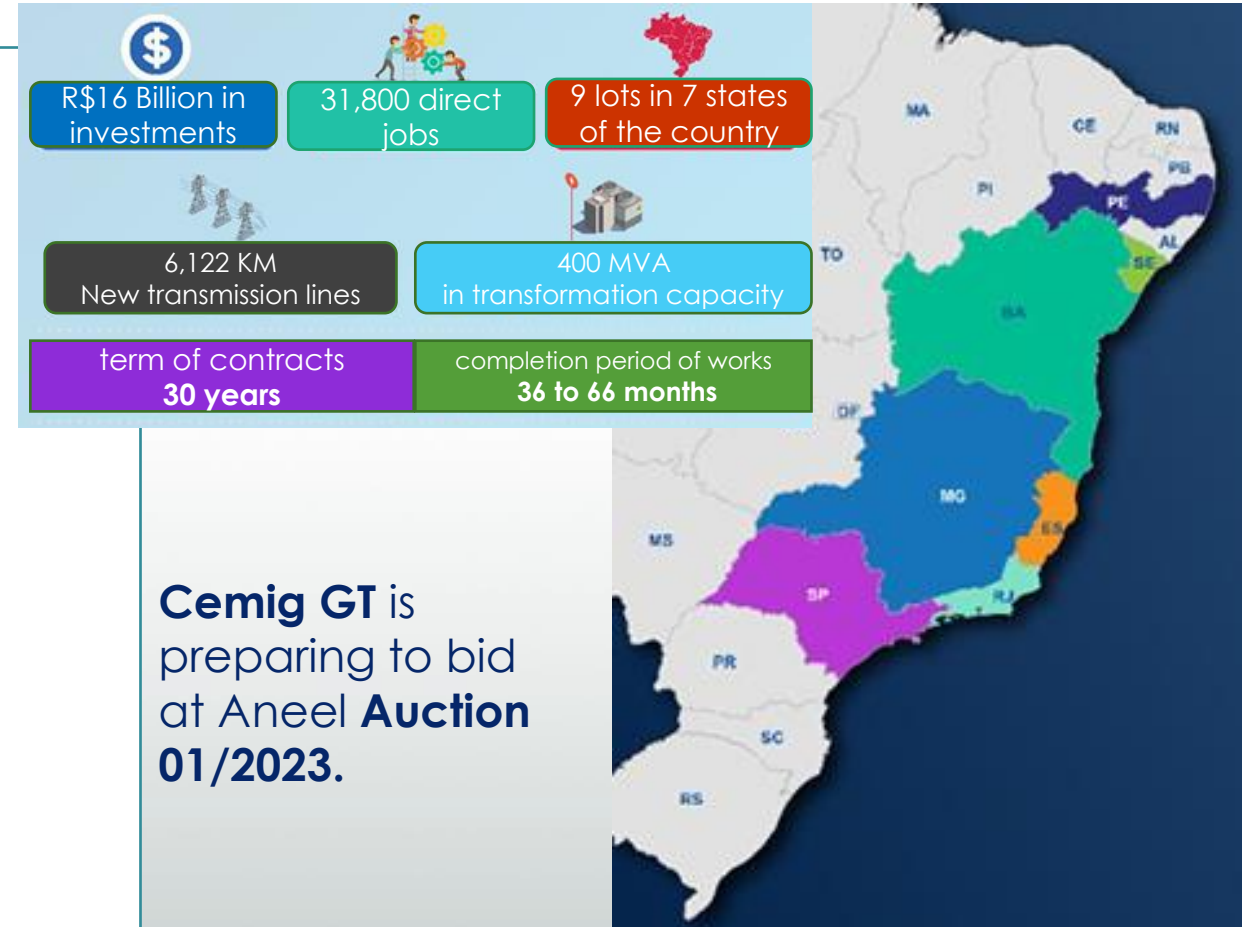
We expect transmission auctions to continue, since expansion of renewable sources continues, and the grid requires reliability.

## A transmission auction notice with an expected investment of 16 billion goes into public consultation.

The expectation is that the auction, scheduled for June 30, will surpass the record investments in the history of the agency.



source: Aneel

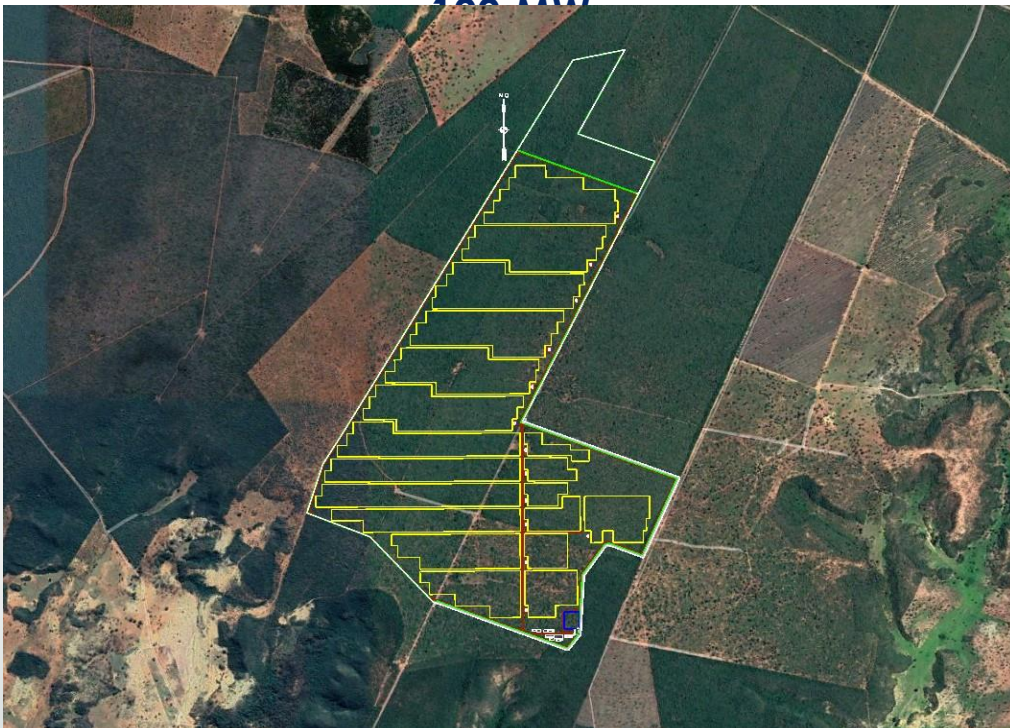


**Cemig GT** is preparing to bid at Aneel **Auction 01/2023**.

## Development of 100% renewable projects

Under construction: *Boa Esperança* and *Três Marias Jusante* photovoltaic plants

Boa Esperança photovoltaic plant:



- Municipality: Montes Claros (Minas Gerais)
- Planned capex: **R\$ 500 mn**
- Planned operational start date: September 2023

Três Marias Jusante photovoltaic plant: **70**



- Municipality: Três Marias, Minas Gerais.
- Planned capex: **R\$ 400 mn**
- Planned operational start date: September 2023



## Development of 100% renewable projects

Largest **floating photovoltaic projects** in Brazil, with concession grants issued

Três Marias Distributed Generation solar plant: **78 MWp**

Emborcação Distributed Generation solar plant: **157MWp**

Cajuru Distributed Generation solar plant: **39MWp**



- Municipality: Três Marias, Minas Gerais.
- Expected start of operation: 2026

- Municipality: Araguari, Minas Gerais
- Expected start of operation: 2026

- Municipality: Carmo do Cajuru, Minas
- Expected start of operation: 2025

- Refurbishment of all aerogenerators completed
- O&M performance contract
- Spare equipment items acquired
- Remote operation from  
Cemig's System Command Center
- Recovery of the 230kV  
Acaraú II–Sobral III Transmission line
- Proinfa contract – Tariff: **R\$ 808.89 / MWh**

Parajuru  
wind farm

**28.8 MW**



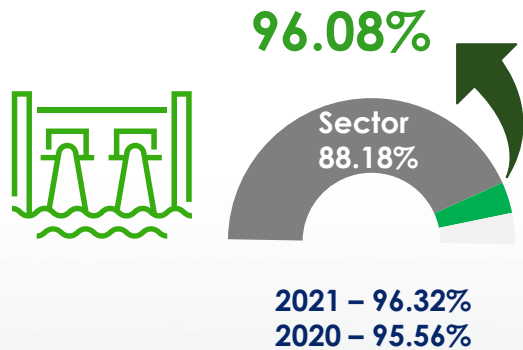
Volta do Rio  
wind farm

**42 MW**

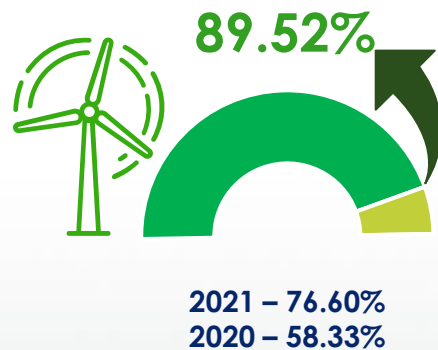


## Operational efficiency

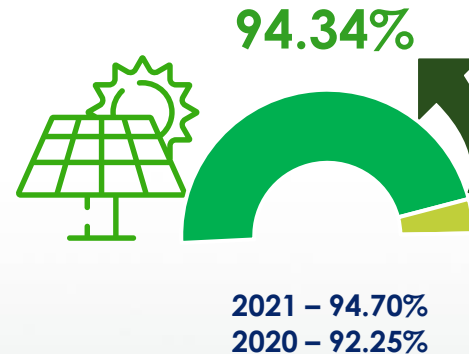
### Hydroelectric plants



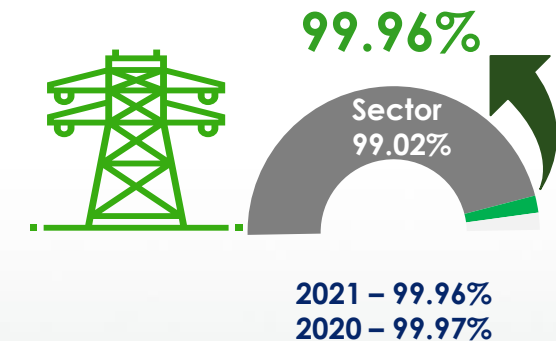
### Wind plants



### Solar plants



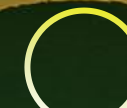
### Transmission lines






Total of **57** generation plants  
Installed capacity: **3.3 GW**

**4** concessions  
**47** substations  
**5,000** km  
of transmission lines

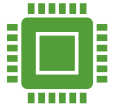
**Availability of Cemig assets is higher than the sector average,  
with consistent increase in operational efficiency**



Subject	Highlights	Images	Gains
<b>Stockholding structure optimization</b>	<p><b>Absorption of Três Marias and Salto Grande hydro plants into Cemig GT:</b></p> <ul style="list-style-type: none"> <li>• Approved by Aneel on Jan. 24, 2023</li> <li>• Next steps: (i) presentation of project to Audit Board; (ii) approval by and EGM of Cemig GT.</li> </ul>		<p>Sum of <b>tax</b> gains and <b>opex</b> reduction:  <b>R\$ 110 mn</b> approx.                      (up to 2053)</p>
<b>Operational efficiency</b>	<p><b>Implementation of Full Remote Assistance:</b></p> <ul style="list-style-type: none"> <li>• Neves 1 substation (photo) and Taquaril substation;</li> <li>• Três Marias, Emborcação and Queimado hydro plants</li> <li>• 10 Small Hydro Plants</li> </ul>		<p>Reduction in <b>opex</b>, approx  <b>R\$ 5 mn / year</b></p>
	<p><b>Divestment of Small Hydro Plants</b></p> <ul style="list-style-type: none"> <li>• Cemig GT offers 15 SHPs – tender published March 17, 2023</li> <li>• Auction scheduled for August 10, 2023: minimum bid <b>R\$ 48.2MM</b></li> </ul>		<p>Reduction of <b>capex and opex</b>, with consequent increase in productivity (R\$/MW)</p>



Focus on development of proprietary **Renewable Generation** projects, especially in **Minas Gerais**



Continue studies for disruptive projects, aligned with the Company's **ESG policies**



**Competitiveness** in Transmission **Auctions**;

Efficiency in strengthening and enhancement of the transmission network



**Best project management practices**, ensuring final works are in line with specification



In management of generation and transmission assets,  
maintain **high levels of availability**, above market benchmarks



In operation of generation and transmission assets,  
consolidate **remote operation** of largest plants and substations



Focus on **operational efficiency**



**Dimas Costa**

**Chief Trading Officer**

## Ambition



Consolidate Cemig's leadership in trading of power supply to final clients, reaching sales volume of **4.4 GW**<sub>average</sub> in the **Free Market in 2032**

## Strategic options



Consolidate position in the Free Market and seek growth in the **retail market**

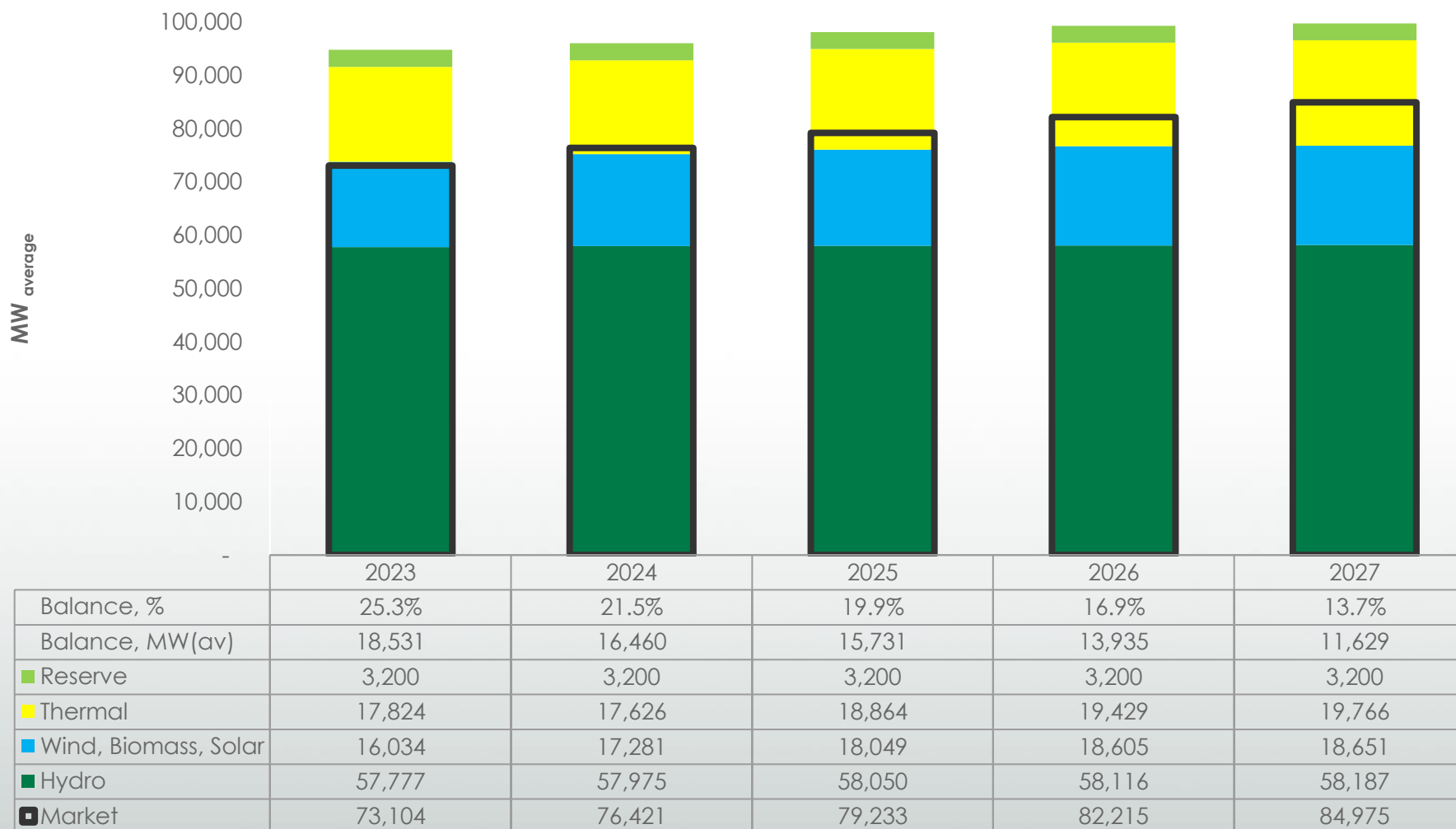
Trade energy at **competitive prices**, closing positions in the market at the appropriate moments

Perfect the **best practices for monitoring and managing material risks**, giving transparency to the organization

Develop **digital channels** and adapt the **operational model**

Calibrate **supply of energy products** and widen the **marketing strategy for the Free Market**

## Scenario of surplus supply leads to lower prices in the spot market

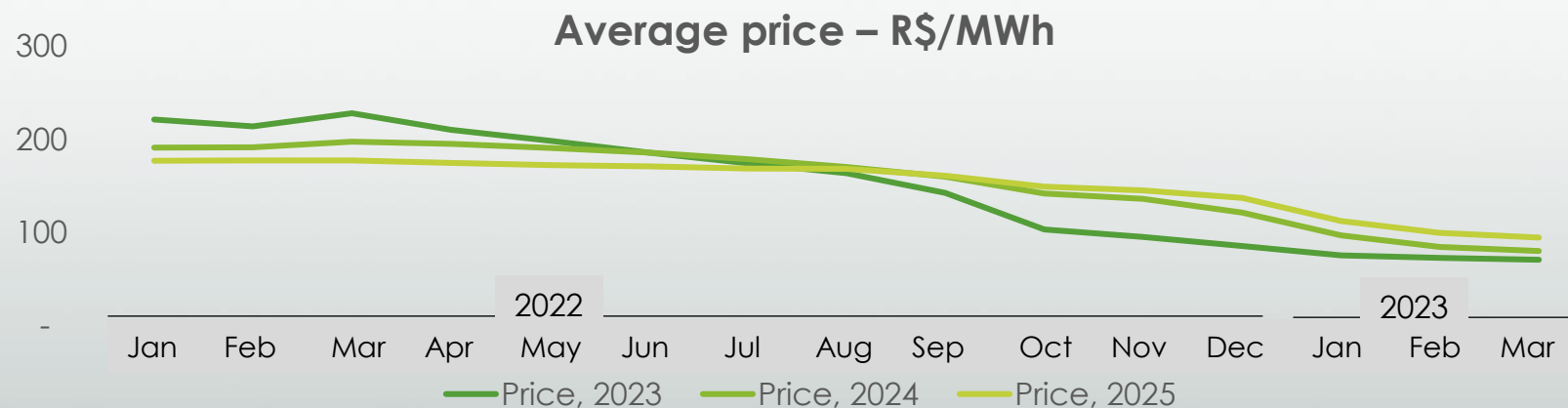
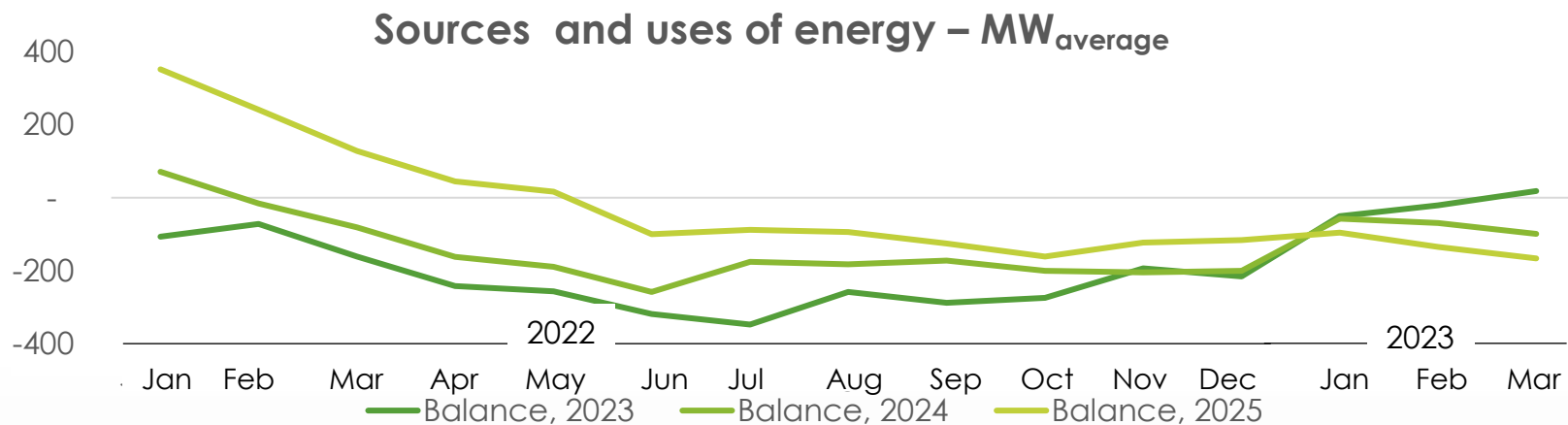


Source: March 2023 monthly operational survey (PMO)



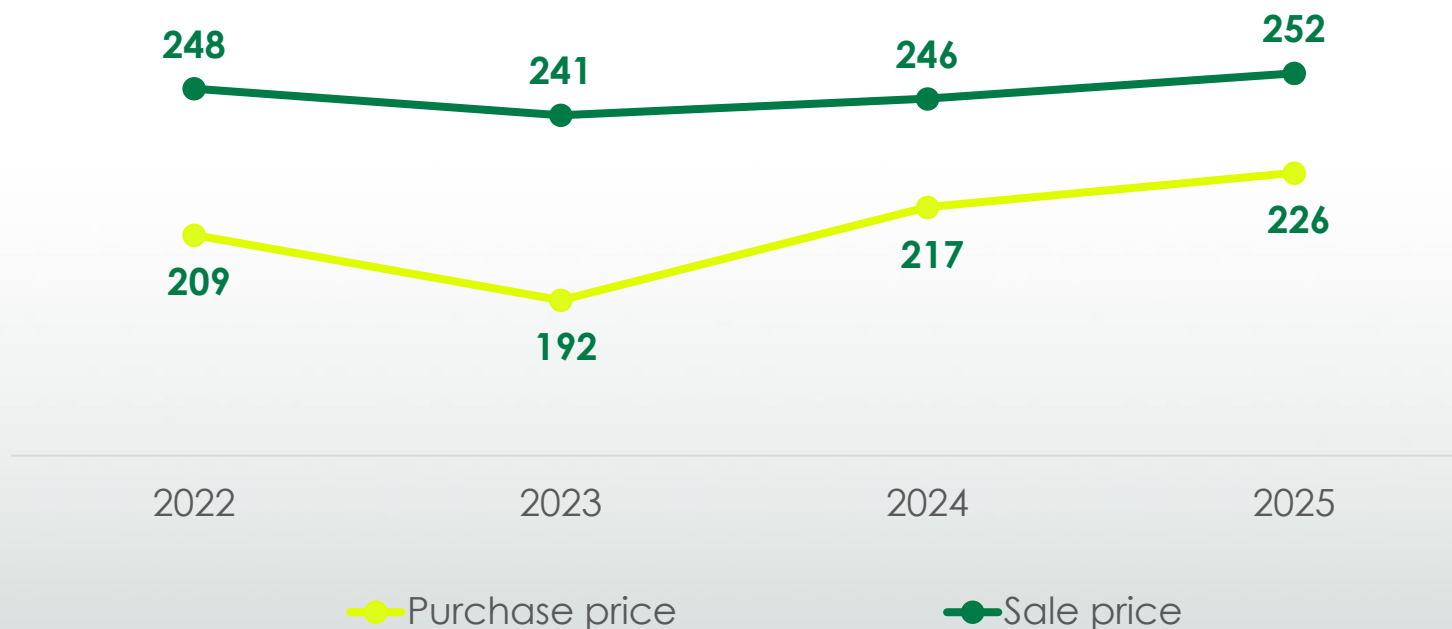
## Energy balance positions from Jan. 2022 to Mar. 2023

**Correct analysis** of the trend enables **taking of accurate decisions**



Carefully planned and executed **trading strategy** leads to **good results** in terms of **purchase** and **sale** prices, and **margins**

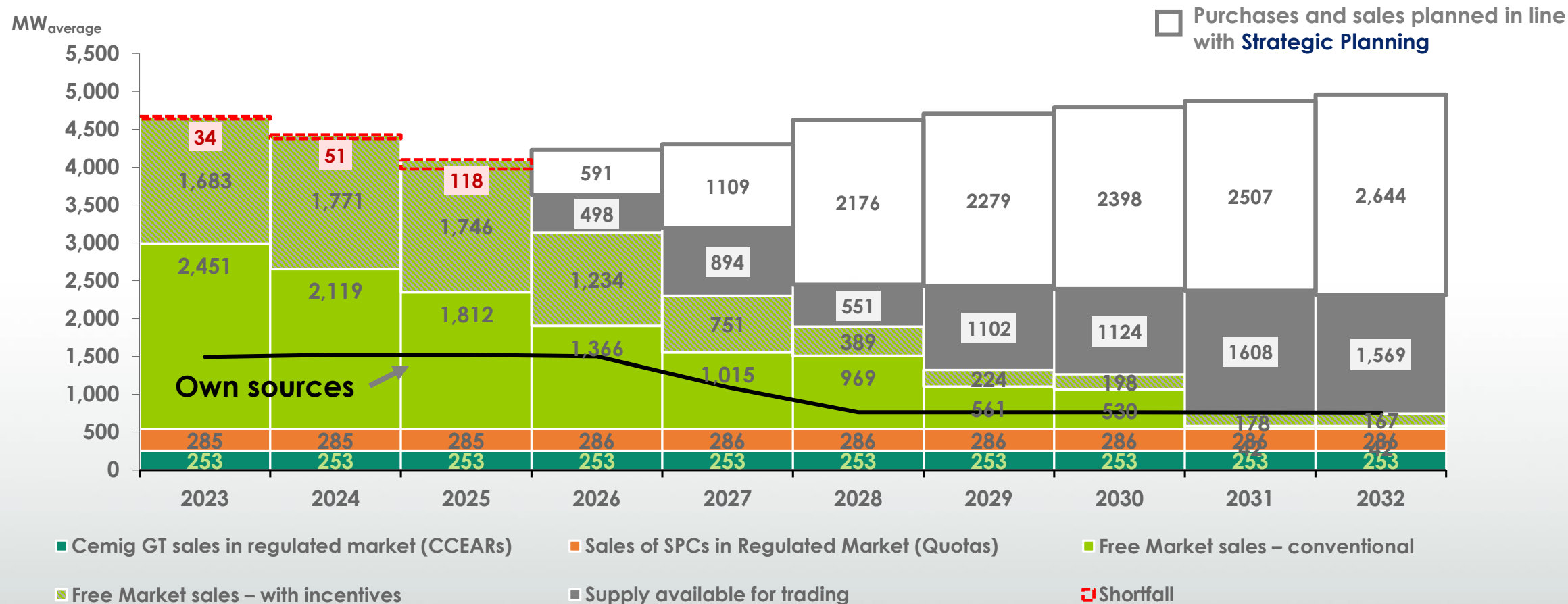
Purchase and sale prices – R\$/MWh



(\*) Sale prices shown include purchases of conventional supply and incentive-bearing supply from outside parties.

## Short positions, 2023–2025

Position at **March 2023**



(\* ) Considers the total availability of energy in the Cemig group's generation companies (Cemig GT, Cemig H, Cemig Trading, Sá Carvalho, Horizontes, Cemig PCH, Rosal, Cemig Geração Três Marias, Cemig Geração Salto Grande, Cemig Geração Itutinga, Cemig Geração Camargos, Cemig Geração Leste, Cemig Geração Oeste, Cemig Geração Sul, and the Boa Esperança and Jusante hydroelectric plants).

(\* ) In 2023: Balance including effect of expected GSF for the year (0.87). As from 2024: structural energy balance.

## Potential of the retail market

(Brazil, clients still captive, Group A)

Demand range (=D) (kW)	Number of consumers	Total consumption (MW <sub>average</sub> )	Average consumption (MW <sub>average</sub> / consumer)
500 > D > 300	6,312	339	0.054
300 > D > 100	69,835	2,478	0.035
D < 100	77,158	937	0.012
<b>TOTAL, high voltage</b>	<b>153,305</b>	<b>3,754</b>	<b>0.024</b>

### Assumptions:

- We expect 80% of retail customers still in the captive market who have demand below 500 KW to migrate by 2032:
  - **3,000 MW<sub>average</sub>**
  - **123,000** consumer units
- In Dec. 2028, Cemig would be serving 20% of these consumers:
  - **600 MW<sub>average</sub>**
  - **24,500** consumer units

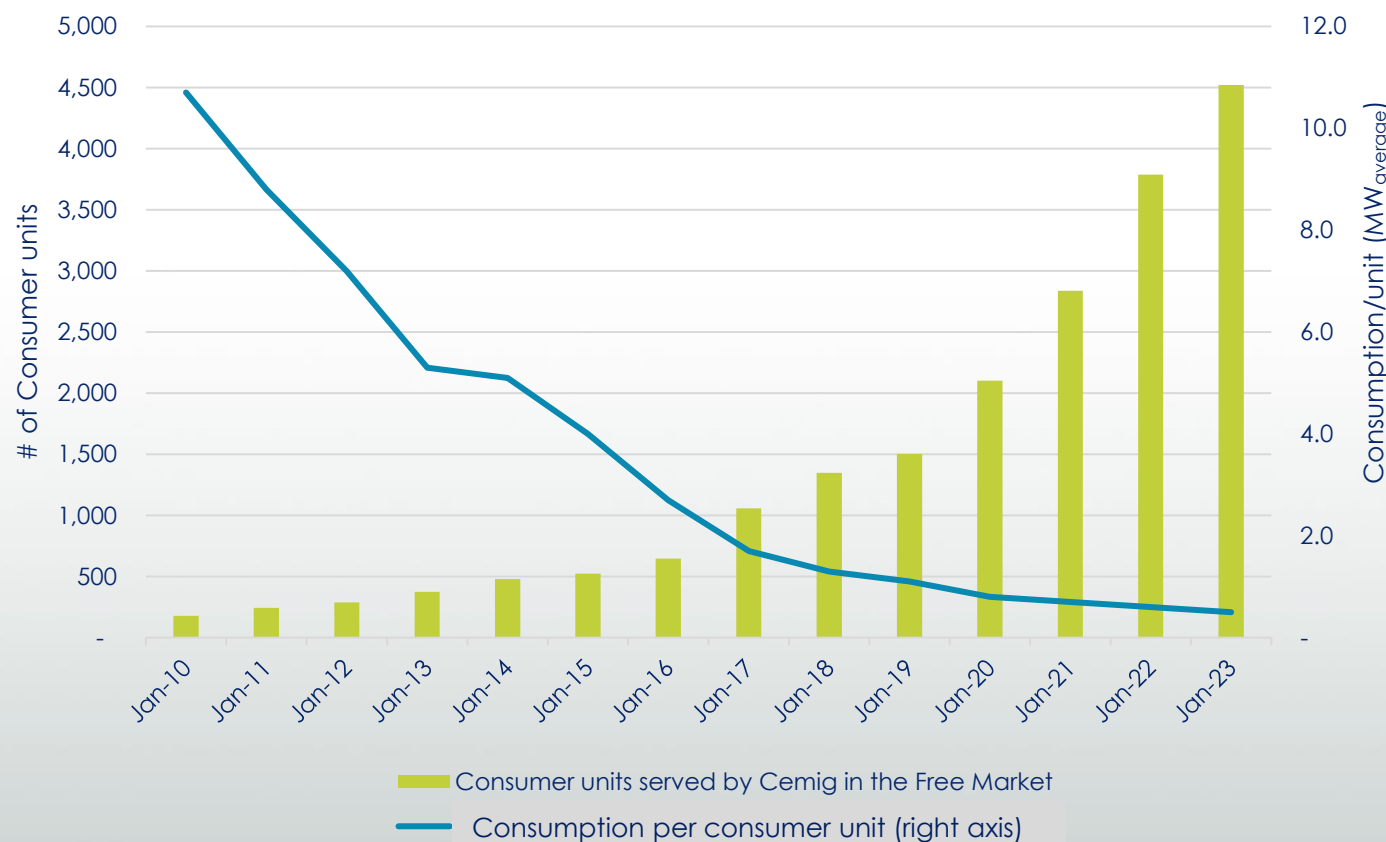


- Structuring of an **area dedicated** to the retail market
- **Adaptation** of products to the **needs of smaller clients**
- **Digitization** of customer service processes and **automation**
- **Marketing action** to promote **Cemig in the Free Market**

## Cemig and the Free Market – Leadership is long-established

- 2005 – **Cemig GT** was created, and oriented to the Free Market. Today Cemig supplies energy to **15% all the Free Clients of Brazil\***
- 2010 – Creation of a specific product for **clients of incentive-bearing supply**. High growth in this segment – today we have 20% market share\*
- 2018 – **Purchase of incentive-bearing supply** in long-term auctions
- 2022 – **Creation of a specific product for the retail market**, and start of sales in this format
- 2023... Reduction of average ticket of Cemig client – **the retail function is happening!**

History: # of Consumer units x Consumption/unit



(\*) Sales to final clients.



# Thank you!

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