



SMART CITY

EXPO WORLD CONGRESS

Cinthia Ribeiro
Mayor of Palmas

Cinthia Ribeiro

PSDB (Brazilian Social Democracy Party) Woman President State, Cinthia Ribeiro, born in Anapolis (GO) is a Speech Therapist who graduated from UNIP (University of São Paulo) in Brasilia (GO) and a businesswoman. She is a member of the Board of the National Front of Mayors as Vice President of Institucional Relations. She assumed the City Hall in May 2018 and its flags are the defense of women's rights and their participation in many segments of society, youth-oriented public politics and sustainability actions focused on the photovoltaic energy.



Palmas - Tocantins

- ❖ *Founded in May 20, 1989;*
- ❖ *Located in the Northern region of the Country;*
- ❖ *Population of 300,000 inhabitants;*
- ❖ *Per Capita GDP R\$ 28.974,17 / US\$ 6,898.61;*
- ❖ *Media Average Remuneration R\$ 3.317,00 / US\$ 789.76;*
- ❖ *100% coverage of primary health care;*
- ❖ *78% coverage of Full Time School;*
- ❖ *First Capital of Brazil with the universalization of the sewage collection and treatment service;*
- ❖ *First Capital of Brazil to Encourage the Use of Sustainable Energy.*

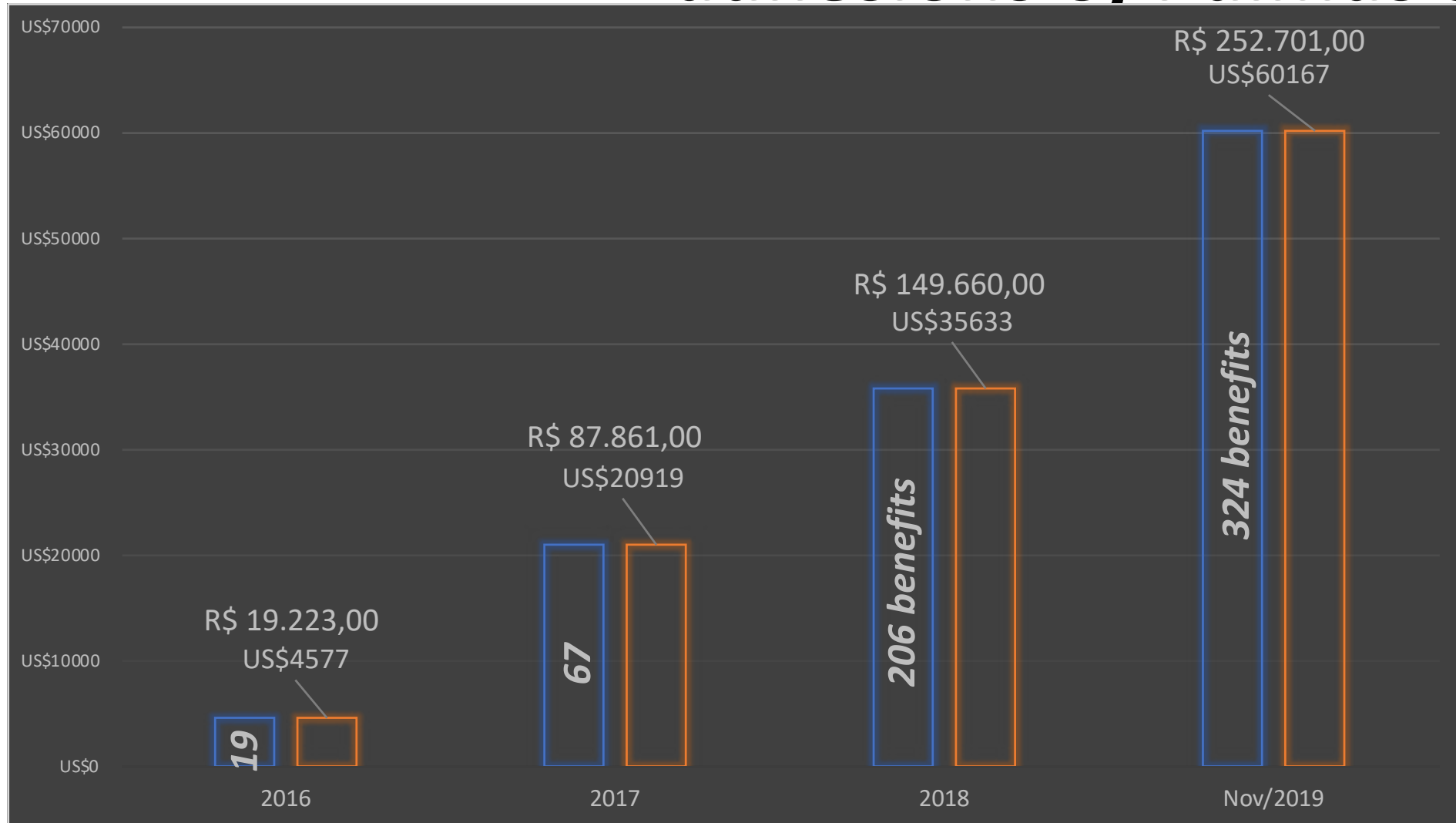


Program Palmas Solar

<i>Program Goals</i>	<i>Fiscal Taxes</i>	<i>Legal Aspects</i>
<ul style="list-style-type: none">❖ <i>Encourage the use of solar energy by the population of Palmas;</i>❖ <i>Stimulate the development and capacity building of commercial and service sectors related to solar energy systems;</i>❖ <i>Increase the participation of solar energy in the municipal energy matrix.</i>	<ul style="list-style-type: none">❖ <i>Up to 80% of the IPTU (Urban Property and Territorial Tax);</i>❖ <i>Up to 80% of ITBI (Real Estate Transfer Tax);</i>❖ <i>Up to 25% of the Onerous Grant (right to build, change of use or regularize buildings);</i>❖ <i>Up to 60% of ISSQN (Tax on Services of Any Nature).</i>	<ul style="list-style-type: none">❖ <i>Supplementary Law No. 327 of November 2015;</i>❖ <i>Decree Nº. 1,506, December 2017</i>

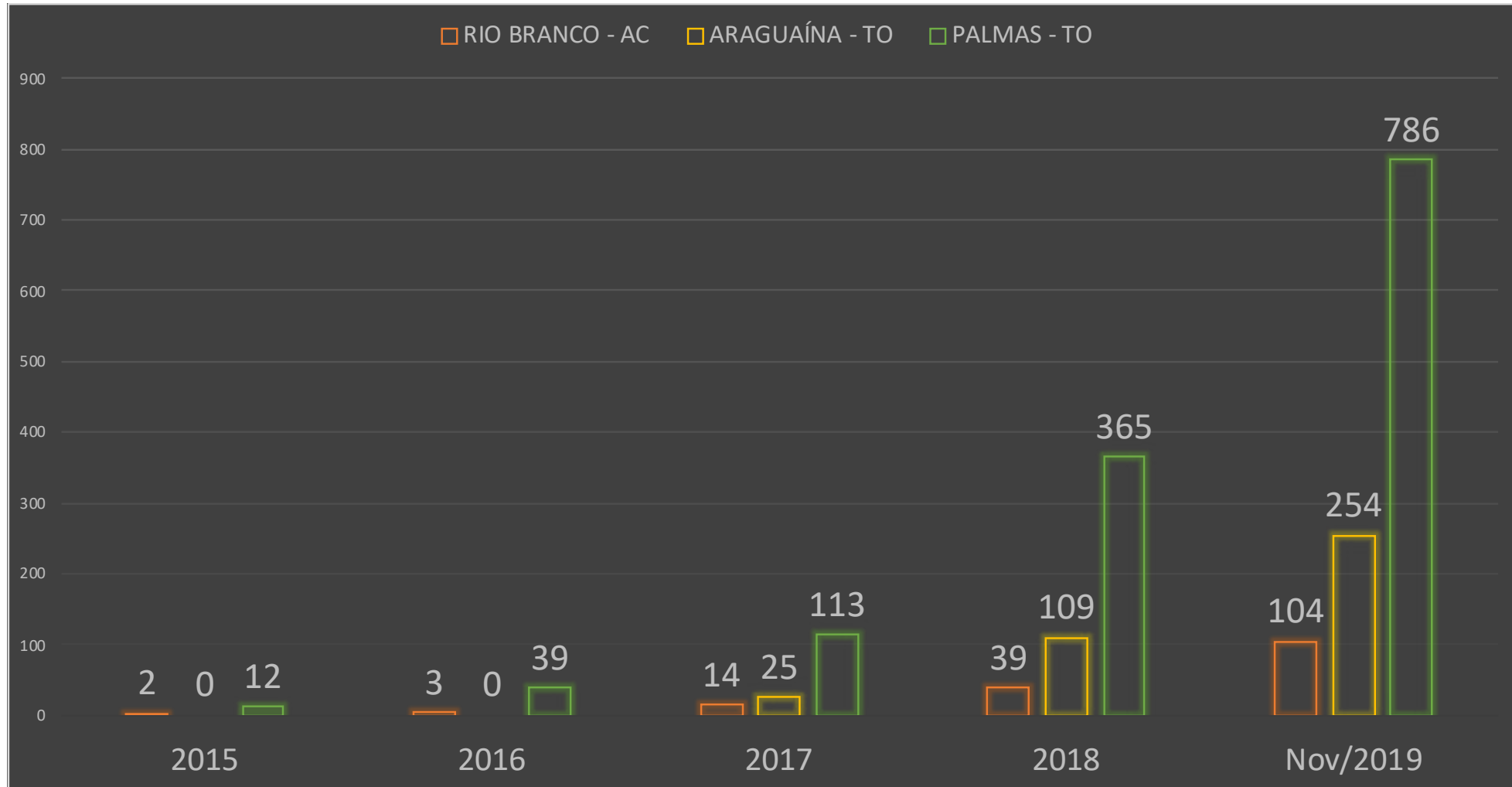


Tax incentives granted and number of adhesions of Palmas Solar



Source: SECRES / Technical Advisory for the Palmas Solar Program, available November 14, 2019.

Palms Installed Systems Compared to Cities in the Same Region



Source: <http://www.aneel.gov.br/>.



Program Impacts on the City

Increase in the number of photovoltaic systems



Exponential growth in solar energy use by homes and businesses.

Increasing number of companies



Approximately 70 existing companies in the municipality of Palmas.

Professional courses



More than 100 new qualified professionals in the solar energy business.

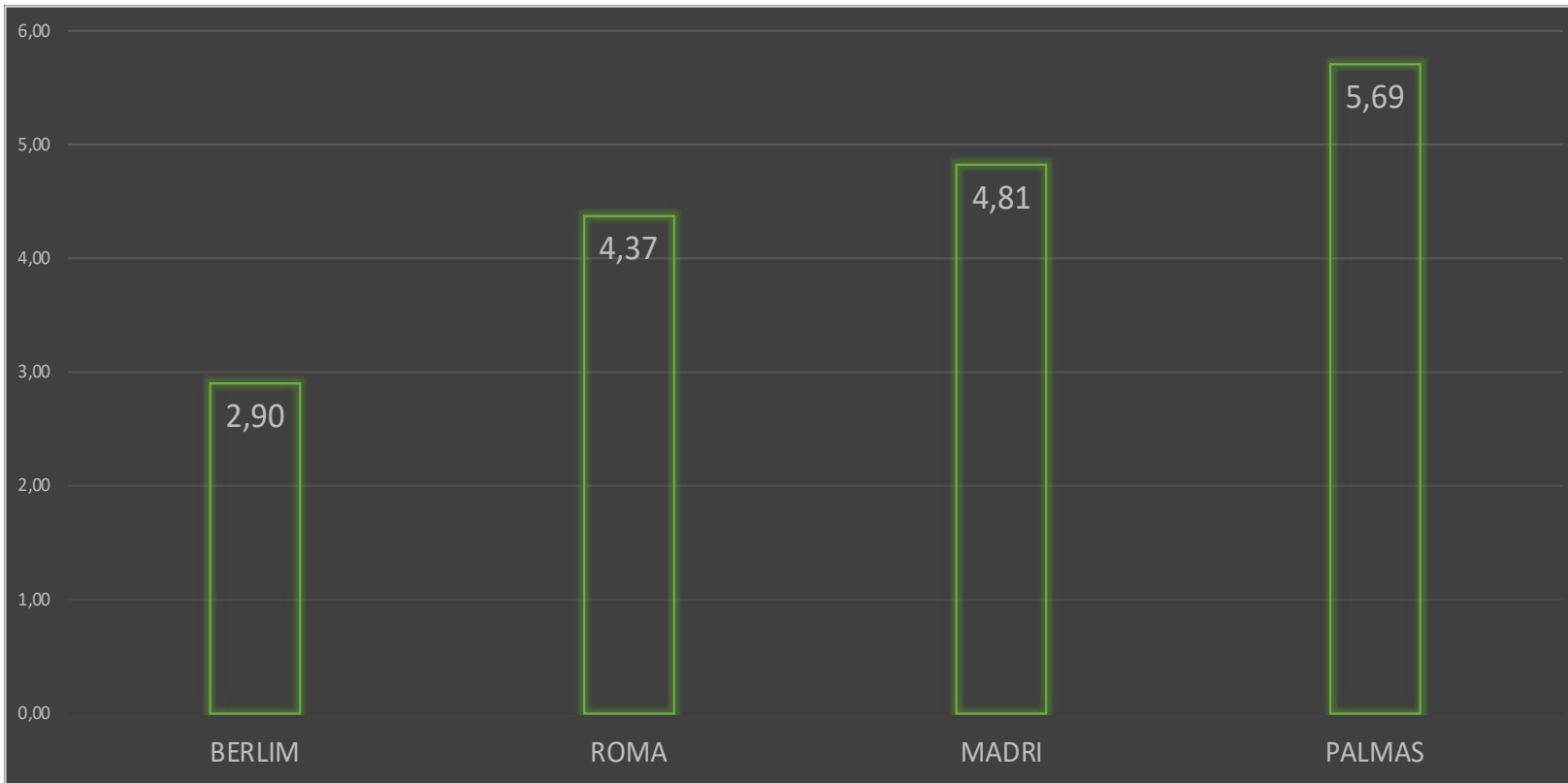


The Solar Park of Palmas



Photovoltaic Systems to be installed in buildings and municipal public areas to meet the City's electricity consumption demand.

Comparison of solar incidence between Palmas and cities in Europe. kWh/m²/day



Scenario: The average solar radiation in Palmas stands out among the highest on the planet.

Opportunity: Avail this potential representative of solar energy with the implementation of the Solar Park of Palmas.

Impact: Optimize and direct resources to municipal public policies.



Source: <https://globalsolaratlas.info/>

Objectives of the Solar Park

- ❖ *Generate enough energy to meet 100% of the consumption demand of Palmas City Hall;*
- ❖ *Encourage the adhesion of solar energy by the population of Palmas;*
- ❖ *Increase investments in education, health, infrastructure, social projects through the savings generated by Solar Park;*
- ❖ *Make Palmas a sustainable and efficient city reference.*



Initial Investment on the Solar Park



INVESTMENTS	<i>R\$ 50.000.000,00 / US\$ 11,876,000.00</i>
RESOURCE SOURCE	<i>Infrastructure and Sanitation Financing Program– FINISA</i>
FINANCIAL INSTITUCIONAL	<i>Caixa Econômica Federal (Bank)</i>

ANUAL ECONOMY WITH WASTE ENERGY	<i>R\$ 13,000,000.00 US\$ 3,088,000.00</i>
PAYBACK	<i>4 years</i>



Source: SECRES / Technical Advisory for the Palmas Solar Program,
available November 14, 2019.

First Stage of implementation of the Solar Park

Goal: To attend 100% of Palmas teaching units.



Monthly Savings Generated: R\$ 400.000,00 / US\$ 95,000.00



Return Investment:
Strengthening of educational policies aimed at improving school feeding, sustainability, agroecology and quality of life.

Second stage of implementation of the Solar Park

Goal: Meet 100% of public buildings.

Monthly Savings Generated: R\$ 1.200.000,00 / US\$ 285,000.00



Solar Park Test Project

Municipal School of Full Time Almirante Tamandaré



Installed power(kWp)	44 kWp
Annual power generation (kWh/year)	67,650.05 kWh/year
Time of return on investment	6 years
Annual Economy(R\$)	R\$ 29,391.92 / US\$ 6,980.00

Municipal School of Full Time



Number of bus stops	40
Total installed power (kWp)	38.4 kWp
Annual power generation(kWh/year)	61,200 kWh/year
Time of return on investment	1 year
Annual Economy (R\$)	R\$ 50,200.00 / US\$ 11,924.00



Source: SECRES / Technical Advisory for the Palmas Solar Program,
available November 14, 2019.



Palmas will be the first Brazilian city with 100% photovoltaic solar energy production in public buildings



“The principle of efficiency requires that administrative activity be carried out with promptness, perfection and functional performance. It is the most modern principle of the administrative function, which is no longer content to be performed only legally, demanding positive results for the public service and satisfying the needs of the community and its members.”

Hely Lopes Meirelles

Thank you very much!