



**Asociación Mexicana de Energía Solar Fotovoltaica**

**Distributed Solar in Mexico  
Compensation schemes, profitability,  
market developments and outlook**

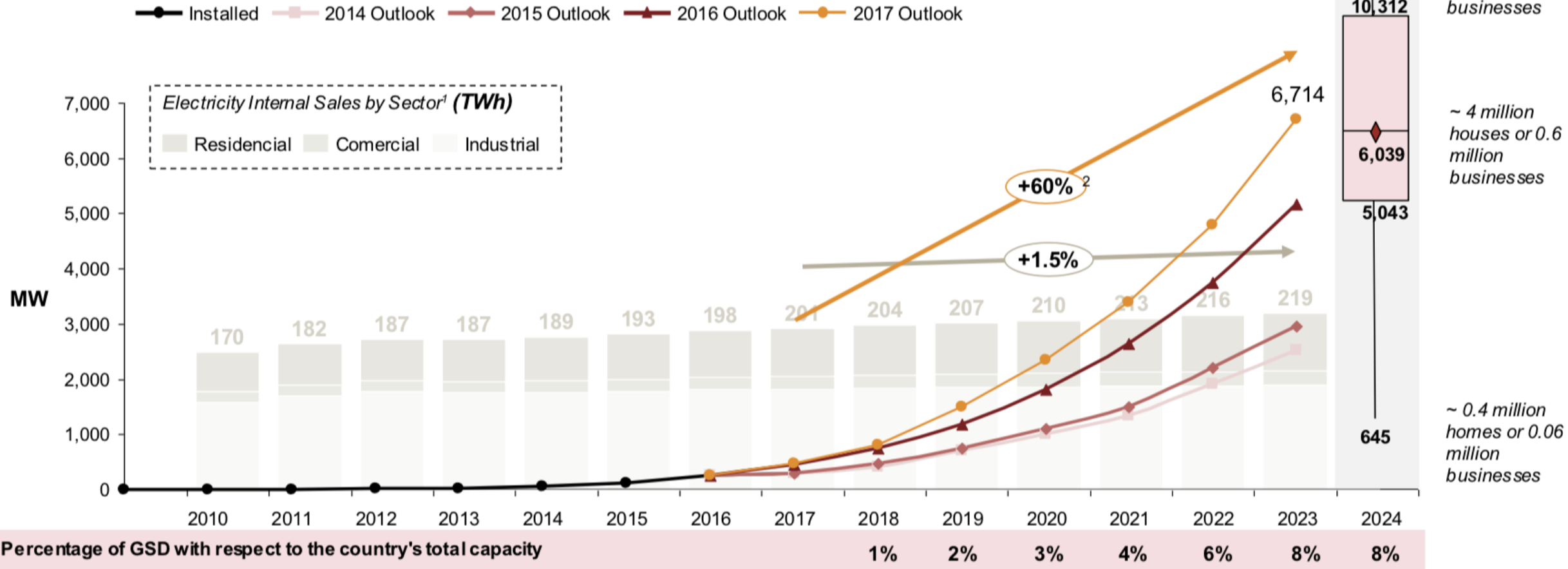


# Distributed Solar in Mexico

- *For the past 10 years the Distributed Solar Energy market has been exponentially increasing. Still in 2017 DSE represents only 0.5% of Mexico's energy capacity.*
- *Currently DSE is forecasted to surpass the cumulative 1GW this 2018.*
- *For the next 5 years the growth is considered to grow in average 60% Y/Y. With a cumulative capacity of over 6GW.*

# *It is estimated that in Mexico solar distributed generation can reach ~ 6,000 MW in the next 6 years*

## Cumulative Solar Generation Capacity Distributed in Mexico – 2010 a 2024E (MW)



(1) Excludes Agriculture and Services  
 (2) Considering an average of 1.5 kW/house and 10kw/business  
 CSource: CRE, SIE encuesta

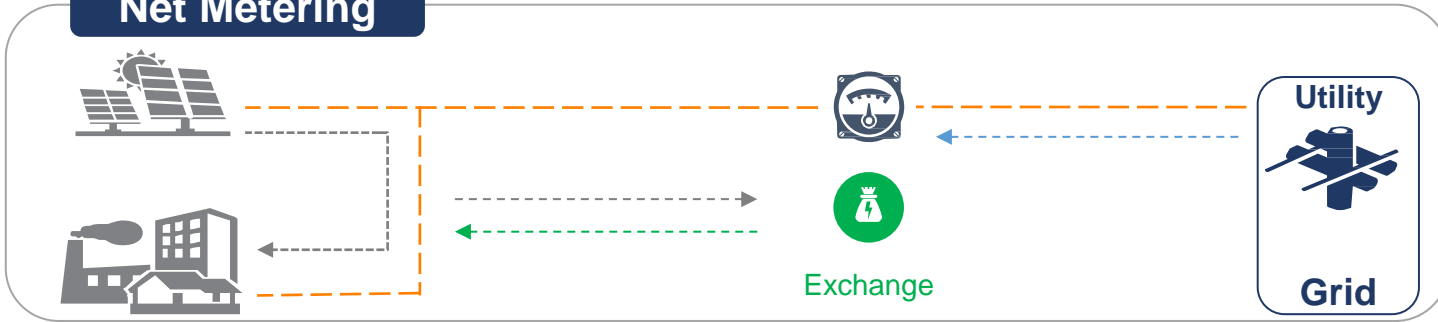


Merida, Yucatan ↑

← Mexico City

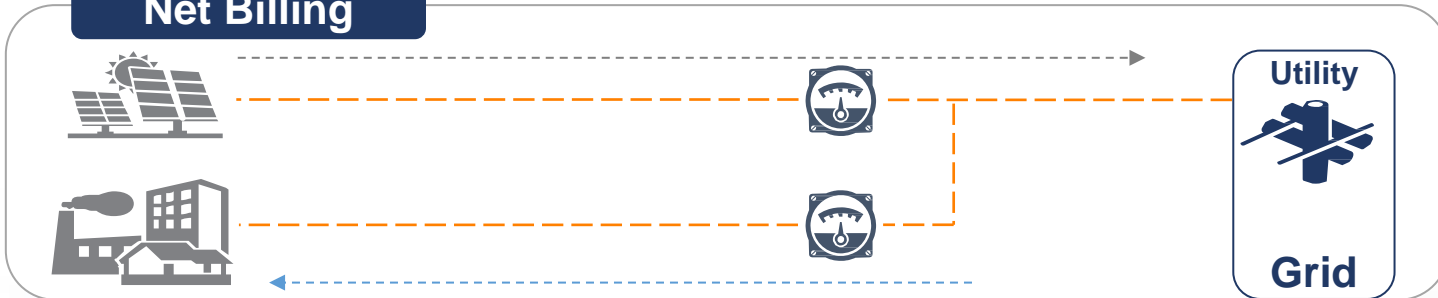
# Compensation Schemes

## Net Metering



$$\text{Delivered Energy by Utility} - \text{Delivered Energy by Generator}$$

## Net Billing



$$\begin{aligned} \text{Delivered Energy by Generator} &= \text{Paid at PML*} \\ \text{Delivered Energy by Utility} &= \text{Billed at applicable rate} \end{aligned}$$

## Total Sale



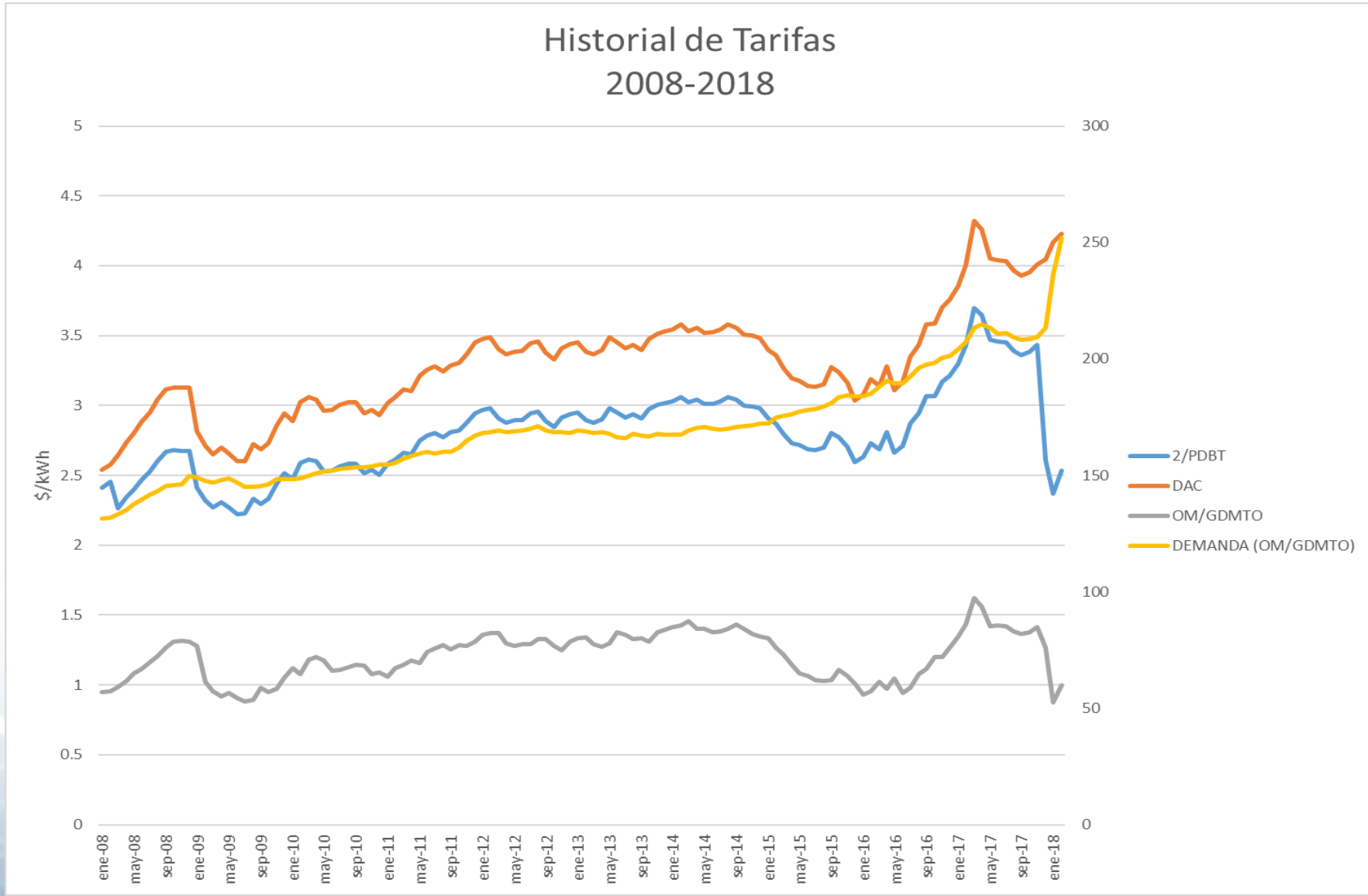
$$\text{Delivered Energy by Generator} = \$$$

\*PML: Precio Marginal Local. (Local Node Price)

## **Existing barriers:**

1. The enforcement of the national policy by the monopoly Utility company.
2. The subsidy given to the fossil-fuel industry, which slows down the un-subsidized solar penetration.

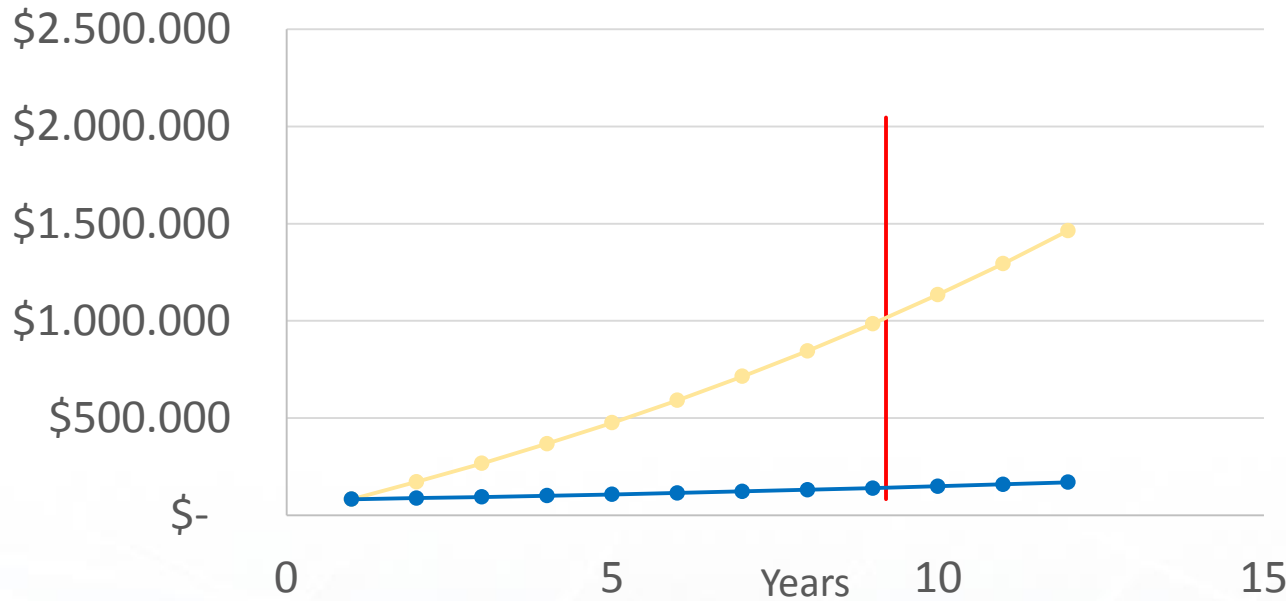
# Mexico Electricity Rates History





# Profitability in Net Billing

ANALISIS PLM



- PUNTO DE EQUILIBRIO
- INGRESO ACUMULADO
- INGRESO ANUAL

Year	Annual Income	Cumulative Income	ROI
1	\$83,311.17	\$83,311.17	
2	\$88,893.02	\$172,204.18	
3	\$94,848.85	\$267,053.03	
4	\$101,203.72	\$368,256.75	
5	\$107,984.37	\$476,241.12	
6	\$115,219.32	\$591,460.45	
7	\$122,939.02	\$714,399.46	
8	\$131,175.93	\$845,575.40	
9	\$139,964.72	\$985,540.12	
10	\$149,342.36	\$1,134,882.47	9.2

Profitability in Yucatan PLM	
Node	08NIH-115
Location	YUCATAN
Compensation Scheme	NET BILLING
Size of PV system	50kW
Average effective Sun Hours	4/DIA
\$/W USD installed	\$1.10





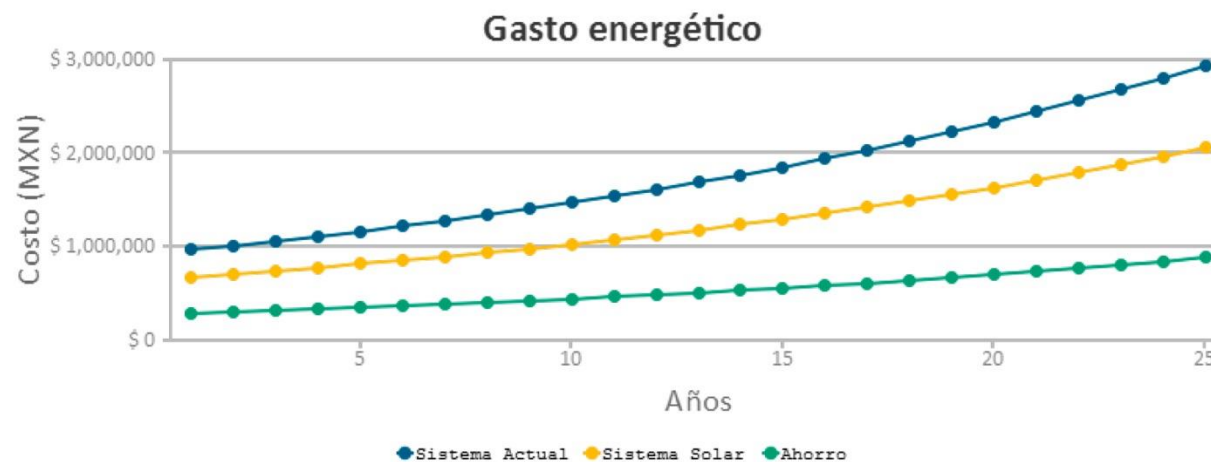
# Profitability in Net Metering and PBDT

FECHA	PRECIO
NOVIEMBRE 2017	\$ 3.43

FECHA	FEBRERO 2018	
DIVISIÓN	PRECIO	DIFERENCIA
BAJÍO	\$ 2.43	-29%
BAJA CALIFORNIA	\$ 1.66	-52%
BAJA CALIFORNIA SUR	\$ 2.45	-28%
PENINSULAR	\$ 2.54	-26%
SURESTE	\$ 2.45	-29%
NORTE	\$ 2.54	-26%
CENTRO SUR	\$ 2.54	-26%
CENTRO ORIENTE	\$ 2.43	-29%
VALLE DE MÉXICO SUR	\$ 2.33	-32%
VALLE DE MÉXICO CENTRO	\$ 2.23	-35%
NOROESTE	\$ 2.06	-40%
VALLE DE MÉXICO NORTE	\$ 2.33	-32%
JALISCO	\$ 2.81	-18%
GOLFO NORTE	\$ 2.13	-38%
CENTRO OCCIDENTE	\$ 2.55	-26%
ORIENTE	\$ 2.60	-24%
GOLFO CENTRO	\$ 2.50	-27%

Proyección de gasto energético (MXN)

Años	Pago anual actual	Pago anual con sist. solar	Ahorro	Ahorro Acumulado	% Recuperación
1	\$966,743.08	\$676,489.89	\$290,253.18	\$290,253.18	24.56 %
2	\$1,012,566.70	\$708,555.51	\$304,011.18	\$594,264.37	50.28 %
3	\$1,060,562.36	\$742,141.05	\$318,421.31	\$912,685.68	77.22 %
4	\$1,110,833.02	\$777,318.53	\$333,514.49	\$1,246,200.17	105.44 %



Beneficios

### Reducción de Emisiones



**27 millones toneladas de CO<sub>2</sub>eq** ahorrados  
2018-2024

### Reducción de uso de Agua



**27 MM** de litros ahorrados de Agua  
2018-2024

### Aportación al PIB



**150 MM** de MXN en inversión  
2018-2024

### Creación de Empleos



**77,000** nuevos empleos  
2018-2024

### Uso de Cobre

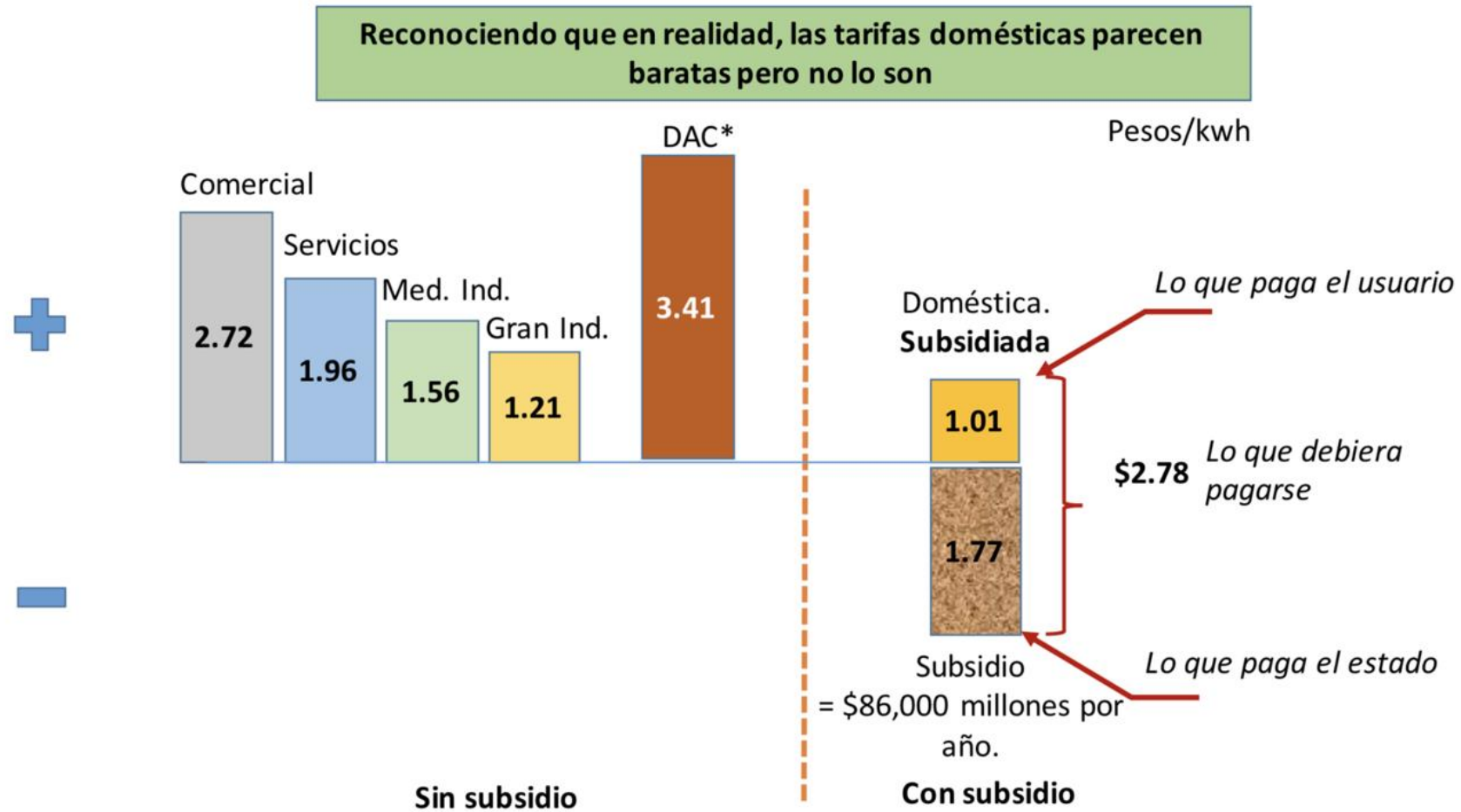


**74 Millones** de Kg empleados  
2018-2024

- Faterged
- Bono Solar
- Proveedor Confiable



# Outlook: Reality of Energy cost



\*Doméstica de Alto Consumo



[www.asolmex.org](http://www.asolmex.org)



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*Muchas  
Gracias*

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