

## Visit of the Argentine delegation from ENRE to California

September 2018



### Abstract

The purpose of this report is to summarize ENRE's official visit to California in terms of insights and knowledge acquired. The trip included a visit to the three pillars of the electric system in California: The California Independent System Operator (CAISO), the California Energy Commission (CEC) and the California Public Utilities Commission (CPUC). A meeting and casual lunch roundtable was also held with Jim Caldwell and Jan McFarland, key proponents of the California solar initiative.

The general conclusion is very promising: when comparing the system structure between Argentina and California, there seems not to be any structural difference, a fact that leaves the way open to cooperation and mutual *know-how* exchange. The main differences lie in technological infrastructure, renewable portfolio standards and emissions control.

### Top-level benchmarking

At a wholesale level, both systems seem to have prepared the ground for open competition and deregulated markets. An important legislative touch/detail in the Californian Energy Imbalance Market (EIM) is the need to identify the source of imported energy into the system as part of the emissions control standards.

On a legislative basis, the main lesson to learn is the recognition of the legislative initiative reflected in the funding for Research and Development (highly deficient in Argentina) and the emplacement of technical staff behind technical decisions.

On a utility regulation level, both systems are much alike: they have similar structures, rate schemes, objectives, bureaucratic mechanisms and political intervention.

## Main ideas and learnings; what we brought back home



**CAISO** The officials prepared a brief system presentation and the operation parameters: the technical difficulty lies in making legislative directives come true in a real time market. Some key learnings:

- Market and system monitoring must be brought as close as possible, both technically and physically<sup>1</sup>
- High expectations for demand response are as good as their implementation from the utilities regulating authority in remediating the effects of the duck-curve<sup>2</sup>
- Focus on the baseline: incorporated inputs from the ISO in the building code aim to achieve a sort of feed-forward control and to add predictability to the system
- The duck curve in combination with inflexible generation leads to unnecessary over-generation. Even though negative prices might appear, costs are compensated by the latter higher market prices
- DERs and Demand response: load will become a commodity, just as present generation
- Storage efficiency lies in diversity: great care must be taken to ensure every technology gets a share

Quote of the visit: *"We don't have anywhere to allocate more demand"*<sup>3</sup>

**CEC** Warmly welcomed in Sacramento, the three officials who joined us offered incisive insights on the legislative processes that shape not only the market but also its stakeholders: RPS, construction code, R&D, data collection, resources integration and much more that make for such a reputable academic agency. The importance of such a commission is crucial because it has access to all the data and the academic knowledge to combine it in order to back/support every proposal and guide public policy. Some key learnings:

- Data is crucial when designing the future: the amount of data managed by the agency allows for a 14-year accurate projections
- Political limits kick in long before technical difficulties
- Use of smart inverters is key in the way to a smart future and an ally in PFR<sup>4</sup>
- Market is reluctant to uncertainty and it hinders innovation: alternative storage technologies are having great difficulties to access funding
- Roof-top PVs: installation represents greater costs than the product itself
- Flow batteries are bulkier but offer infinite cycling capacity when compared to conventional Li-ion

Quote of the visit: *"Stop cutting corners"*<sup>5</sup>

<sup>1</sup> In Argentina, contracts are signed in Buenos Aires and market operation is located in Rosario

<sup>2</sup> Also known as the hippocampus curve

<sup>3</sup> Concerning baseline generation

<sup>4</sup> Primary Frequency Regulation

<sup>5</sup> Concerning setting political criteria over technical recommendations



**CPUC** Given the institutional synergies, probably the most enriching meeting. The Commission gathered experts from every area regarding the items in the agenda, thus generating an excellent opportunity for direct information exchange. The CPUC regulates retail utilities only, but it is exactly the most important regulatory issue Argentina is facing nowadays and where know-how is most appreciated: rate schemes, quality of service (QoS), public safety and smart metering, among others. Some key learnings:

- Smart meters brought more benefits from real time mapping of the grid and its needs than the reduction in metering costs
- Utility revenues are decoupled from the volume of distributed energy
- DERs are subject to net metering and not to net billing
- The legislative limit to fixed charges is USD 10/month
- The combination of pure volumetric charges, DERs and decoupling has a clear impact on rates (sustained by the rest of the demand). There are no signs of a massive crowding-out effect yet<sup>6</sup>
- The amount of energy in monthly allowance (first tier) is location-dependent
- Community Choice Aggregation can be an issue
- Leaflets accompanying bills have shown close-to-none results
- Fines are applied and justice tends to rule in favor of the regulator. However, these fines do not reach the end-user directly: they are incorporated as a lower revenue requirement for the next term
- Customer Reserve Price for higher QoS is constantly under evaluation through surveys and constitutes an important input when elaborating rates

Quote of the visit: *“High price variance among tiers creates opportunities for arbitrage”*

### **Ente Nacional Regulador de la Electricidad**

Buenos Aires, Argentina

ENRE Delegation

**Andrés Chambouleyron** – Chairman of the Board of Directors

**María Eugenia Juárez** – Consulting lawyer / Legal Counselor of the Board of Directors

**Konstantinos Papalias** – Consulting Engineer / Engineering Counselor of the Board of Directors

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<sup>6</sup> Sometimes referred to as the “death-spiral”

## About ENRE

<https://www.argentina.gob.ar/enre>

ENRE, the National Electricity Regulator monitors compliance by the federal distribution companies and regulates electricity generation, transmission and distribution companies in the metropolitan area of Buenos Aires (EDENOR and EDESUR) to ensure that they comply with their respective concessions and with local regulatory frameworks.

Created in 1993 by Law No. 24.065, ENRE must comply with the national policy on electricity supply, transmission and distribution. The objectives shall be the following:

- a) To provide adequate protection of the users' rights;
- b) To regulate the electricity transmission and distribution activities, ensuring the tariffs applied to services are fair and reasonable;
- c) To stimulate private investments in production, transmission and distribution, ensuring markets competitiveness where possible;
- d) To promote operation, reliability, equality, open access, non-discrimination and widespread use of the electricity transmission and distribution services and facilities.