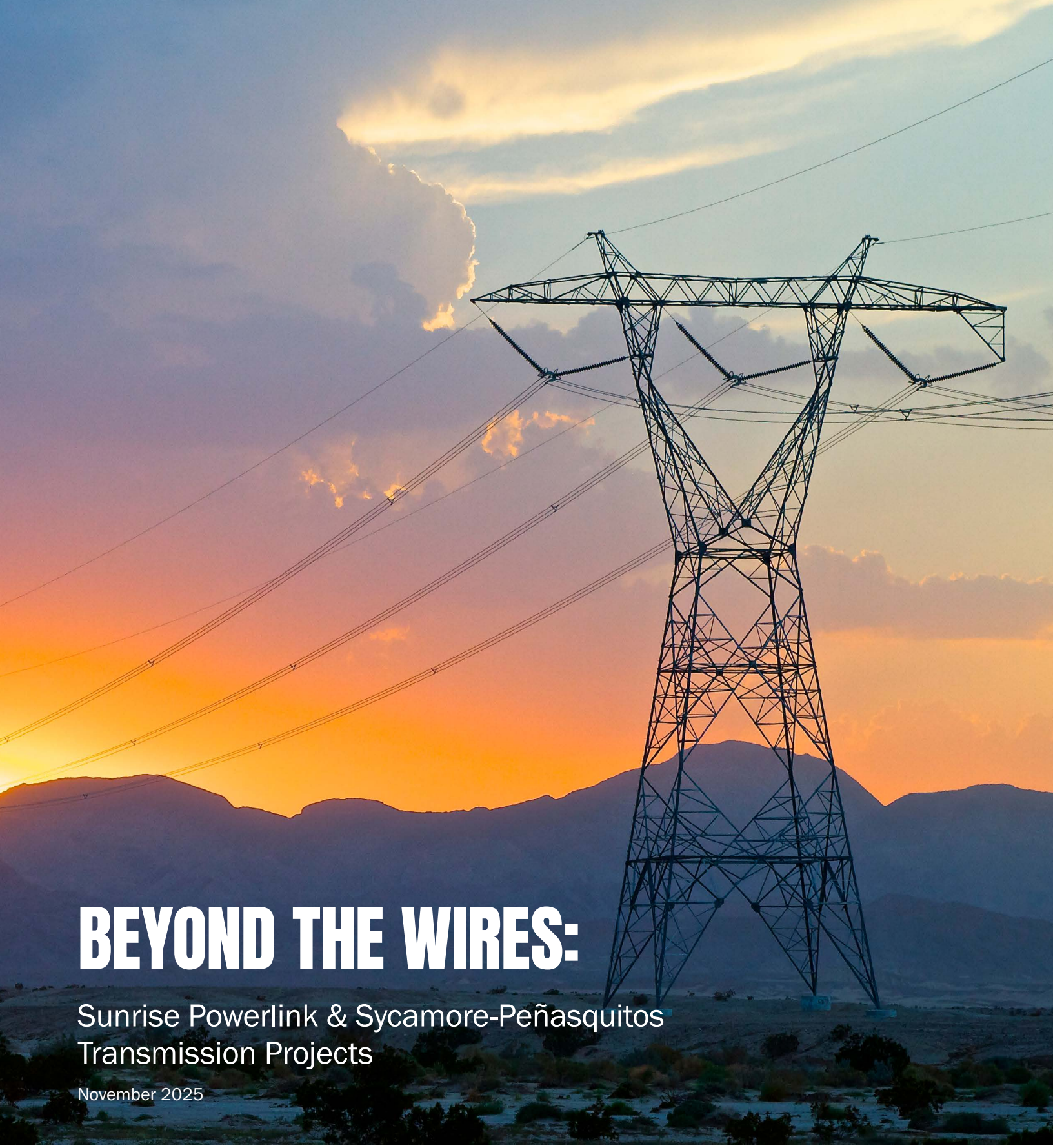

BEYOND THE WIRES:

Sunrise Powerlink & Sycamore-Peñasquitos Transmission Projects

November 2025

PHOTO CREDIT: CITIZENS ENERGY

Environmental Defense Fund

CLEAN AIR TASK FORCE

BEYOND THE WIRES:

Sunrise Powerlink & Sycamore-Peñasquitos Transmission Projects

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Project Summary
This case study is part of a broader set investigating how electricity transmission projects have integrated community benefits into their development processes. These case studies specifically explore transmission projects that have been completed and are in service. The purpose of this work is to learn more about the nature of benefits frameworks; the regulatory, logistical, and engagement processes that led to agreements; community representation in agreement negotiations; the degree to which frameworks result in demonstrable benefits to the community; and any related implications on project cost and timeline, in order to inform and improve community benefits conversations happening today. These case studies were informed by web research, document and docket review, and first-person interviews.

View the full set of case studies and summary report at:
https://www.edf.org/beyond-wires-community-benefits-transmission-projects
and
https://www.catf.us/resource/beyond-the-wires-community-benefits-from-transmission-projects/

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Glossary of Acronyms

CAISO: California Independent System Operator

CPUC: California Public Utilities Commission

DCA: Development and Coordination Agreement

FERC: Federal Energy Regulatory Commission

IID: Imperial Irrigation District

MMCPG: Mira Mesa Community Planning Group

MOA: Memorandum of Agreement

SDG&E: San Diego Gas and Electric

SUMMARY

Citizens Energy Corporation ("Citizens Energy") is a nonprofit organization that uses profits from ventures on energy projects to fund charitable programs and community organizations.[1] Citizens Energy partnered with utility San Diego Gas and Electric (SDG&E) to develop a novel financing structure to deliver benefits from building new segments of two Southern California transmission lines – the Sunrise Powerlink project and the Sycamore-Peñasquitos project – to San Diego and Imperial County residents and local businesses.

Citizens Energy and SDG&E jointly proposed to California and federal regulators that Citizens Energy become a participating transmission owner on segments of these lines, allowing Citizens Energy to invest part of its profits from the line into community programs, including programs expanding renewable energy access and providing nonprofits with electric vehicles. The first instance of this partnership between Citizens Energy and SDG&E on the Sunrise Powerlink project set precedent, establishing a unique federal- and state-level regulatory arrangement and creating a proof of concept for utilities and nonprofits. The success of this approach later enabled the deployment of a similar partnership on the Sycamore-Peñasquitos line. This arrangement, commonly known as the Citizens Model, is still being proposed and deployed in California today. [2]

This case study shows how being open to out-of-the-box regulatory approaches and unique partnerships can derisk the development of crucial new transmission infrastructure and provide beneficial community services. It also showcases a "top-down" approach where most of the decisions on the types of community services to be provided occurred without significant community input. While some efficiencies may be gained from a "top-down" approach, it also presents risks that the intended benefits do not align with the needs and values of the community. To help ensure project certainty and community support, future application of the Citizens Model and models like it should consider direct consultation with the communities hosting infrastructure central to the framework development.

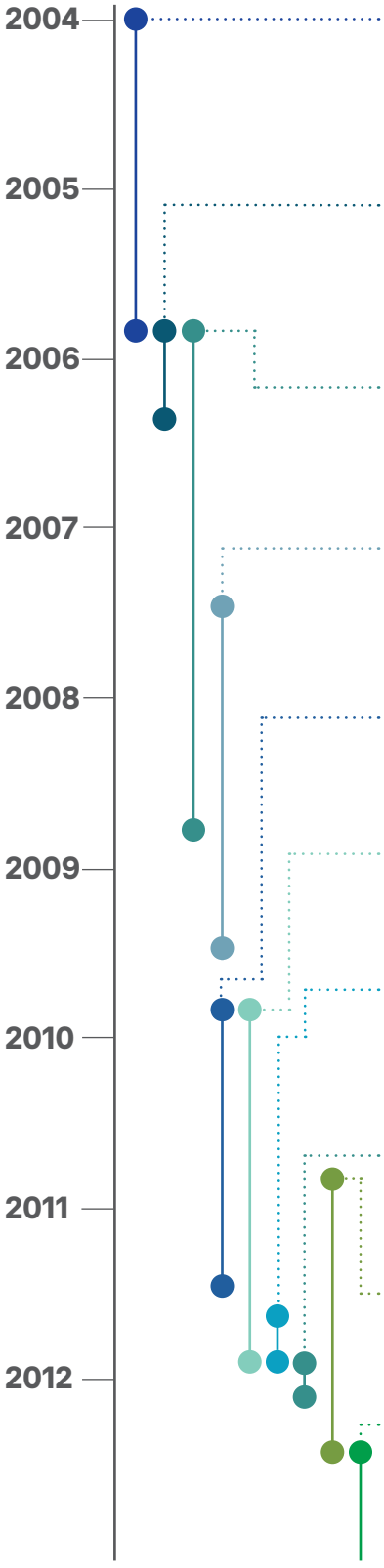
Key Takeaways

- Development of new, creative, and partnership-based community benefits frameworks is possible but rarely straightforward. The Citizens Model required multiple layers of state and federal regulatory review and close interactions between the utility, Citizens Energy, and other local stakeholders. By establishing this new framework, Citizens Energy and SDG&E set regulatory, legal, and organizational precedents for further implementation and variants of the framework.
- The "top-down" structure that was applied in the Citizens Model for these California lines sent resources and funding to local nonprofit organizations, but left the local communities being served – in this case, residents of the Imperial Valley and host areas in San Diego County – on the sidelines. Proactive conversations with the directly impacted communities prior to formalizing the benefits structures could have resulted in services and benefits that more directly reflected local needs.
- Citizens Energy and SDG&E viewed community benefits frameworks as a key strategy for improving the chances of project success. In this case, SDG&E found that greater project certainty outweighed reductions in total profit required under the Citizens Model.
- The direct benefits from the Citizens Model have resulted in "trickle down" benefits – including the creation of veteran and union construction jobs.
- The benefits program for the Sunrise Powerlink and Sycamore-Peñasquitos lines did not and was not intended to directly lower rates for ratepayers. This is due in part to the structure of the Citizens Model, where the funds and resources provided to the nonprofit organizations are years removed from when the transmission lines were proposed. More research is needed to understand ways in which utilities can address affordability challenges while providing benefits to communities hosting infrastructure.

1 *Citizens Energy Corporation.* (2025, May 27). Citizens Energy Corporation.

2 Howland, E. (2024, March 15). *PG&E aims to raise up to $1B for transmission through leases to Citizens Energy.* Yahoo Finance.; California Public Utilities Commission. (2025, January 31). *Pacific Gas and Electric Company Application for Approval under Public Utilities Code Section 851 to Lease Entitlements to Transmission Projects to Citizens Energy Corporation Amendment to Prepared Direct Testimony*.

TIMELINE - SUNRISE POWERLINK



2004 – November 2005: Initial Transmission Project Development

SDG&E first proposes adding transmission capacity through the Sunrise Powerlink Project and begins preparing project. Meanwhile Citizens Energy approaches IID to discuss partnership on a separate project, the Green Path Project, which would serve similar purposes as SDG&E's project.

November 2005 – March 2006: MOA Between SDG&E, IID, and Citizens Energy

Developers of the Sunrise Powerlink and Green Path Projects discuss a potential partnership to reduce redundancy across the two projects. SDG&E, IID, and Citizens Energy sign a MOA in March 2006 agreeing to coordinate development of the eastern segment of the project.

November 2005 – October 2008: Federal and State Environmental Review

SDG&E submits a right of way grant application to BLM for the Sunrise Powerlink Project which begins the environmental review process. BLM issues a final EIS/EIR for both state and federal environmental review and a Record of Decision in October 2008.

March 2007 – May 2009: Formalized Partnership Between SDG&E and Citizens Energy

IID eventually decides to back out of the MOA in November 2007. SDG&E and Citizens Energy formalize the partnership through a DCA in May 2009.

October 2009 – May 2011: Citizens Energy Petitions CPUC Over Lease Structure

Citizens Energy petitions CPUC to approve its segment's leasing structure, which is approved in May 2011.

October 2009 – December 2011: Citizens Energy Petitions FERC Over Rate Structure

Citizens Energy petitions FERC to approve its segment's rate structure, which is approved in December 2011.

August 2011 – December 2011: CAISO Approves Citizens Energy as a Participating Transmission Owner

In August 2011, Citizens Energy applies to the CAISO Board of Directors to become a participating transmission owner on the line, which they approve in December 2011.

December 2011 – February 2012: FERC Approves Citizens Energy Transmission Rates

Citizens Energy submits a proposed transmission owner tariff and rate recovery methodology in December 2011, which FERC conditionally approves in February 2012.

November 2010 – June 2012: Construction and Project Completion

In November 2010, SDG&E starts construction of the Sunrise Powerlink line, which is completed in June 2012.

June 2012 – Present: Citizens Energy Recovers Costs and Reinvests

Starting in 2012, Citizens Energy starts to earn profits which it reinvests into the Imperial County community through low-income residential solar programs. These programs include a rooftop solar initiative and a 39-megawatt solar facility powering 12,000 homes, which was completed in 2019.

TIMELINE - SYCAMORE-PEÑASQUITOS

2012

2012 – March 2013: CAISO Transmission Planning Identifies Sycamore-Peñasquitos Transmission Line

CAISO completes the 2012-2013 Transmission Plan, published in March 2013, which identifies several transmission lines necessary to meet reliability and state policy needs, including the Sycamore-Peñasquitos Transmission Line. This is the first transmission plan developed by CAISO since FERC approved its new open solicitation process.

2013

April 2013 – June 2013: CAISO Opens Solicitation for Developer Proposals for Sycamore-Peñasquitos Transmission Line

CAISO opens the public solicitation process for developers to submit their proposals to build the infrastructure for the Sycamore-Peñasquitos Transmission Line as identified in the 2012-2013 Transmission Plan.

2014

March 2014: CAISO Selects SDG&E and Citizens Energy

The CAISO Board of Governors selects SDG&E and Citizens Energy to develop the Sycamore-Peñasquitos project.

April 2014 – October 2016: CPUC Approves Project Permit

2015

SDG&E and Citizens Energy petition CPUC for a construction permit in April 2014. CPUC prepares an EIR under California Environmental Quality Act (CEQA); a draft EIR was published in September 2015, and a final EIR in March 2016. CPUC issues a permit in October 2016.

2016

March 2016 – February 2017: Mira Mesa Community Planning Group Discusses Routing

Mira Mesa Community Planning Group meets regularly to discuss the proposed routing of the line with limited engagement from SDG&E in 2017.

April 2018 – August 2018: FERC Approves Citizens Energy Transmission Rate Filing

Citizens Energy petitions FERC for approval of a formula rate to recover its investment on the project. FERC approves in August 2018.

2017

January 2017 – August 2018: Construction and Completion

SDG&E begins construction on the project in January 2017, and the line is energized on August 30, 2018.

November 2017: Formalizing the Agreement

2018

In November 2017, SDG&E and Citizens Energy sign a Development, Coordination, and Option Agreement which outlined the terms for the partnership between SDG&E and Citizens Energy.

August 2018 – Present: Citizens Energy Recovers Costs and Reinvests

Starting in August 2018, Citizens Energy starts to earn profits which it reinvests into programs for low-income ratepayers and disadvantaged communities in San Diego County. Programs focus on investing in electric vehicles and charging stations for local nonprofits.

THE ORIGIN OF THE SDG&E-CITIZENS ENERGY PARTNERSHIP: SUNRISE POWERLINK

In 2002, the California State Senate established a Renewable Portfolio Standard (RPS) program, with an initial goal of meeting 20% of electricity retail sales in the state with renewable resources by 2017.[3] Simultaneously, the San Diego region was facing growing transmission capacity constraints while planning the retirement of aging power plants, including the South Bay natural gas-fired power plant.[4] This situation called into question whether enough electricity could be delivered throughout the region to meet growing demand, interconnect resources, and ensure reliability. The California Independent System Operator (CAISO)[5] and other parties identified the need for major transmission upgrades to resolve reliability deficiencies.[6]

In 2004, SDG&E proposed adding transmission capacity in the region through the Sunrise Powerlink project, a new "energy highway" meant to solve reliability concerns and transmit renewable-generated electricity from the Imperial Valley.[7] The line would connect the Imperial Valley substation located in Imperial County to a substation in

FIGURE 1:
Approved Route of Sunrise Powerlink

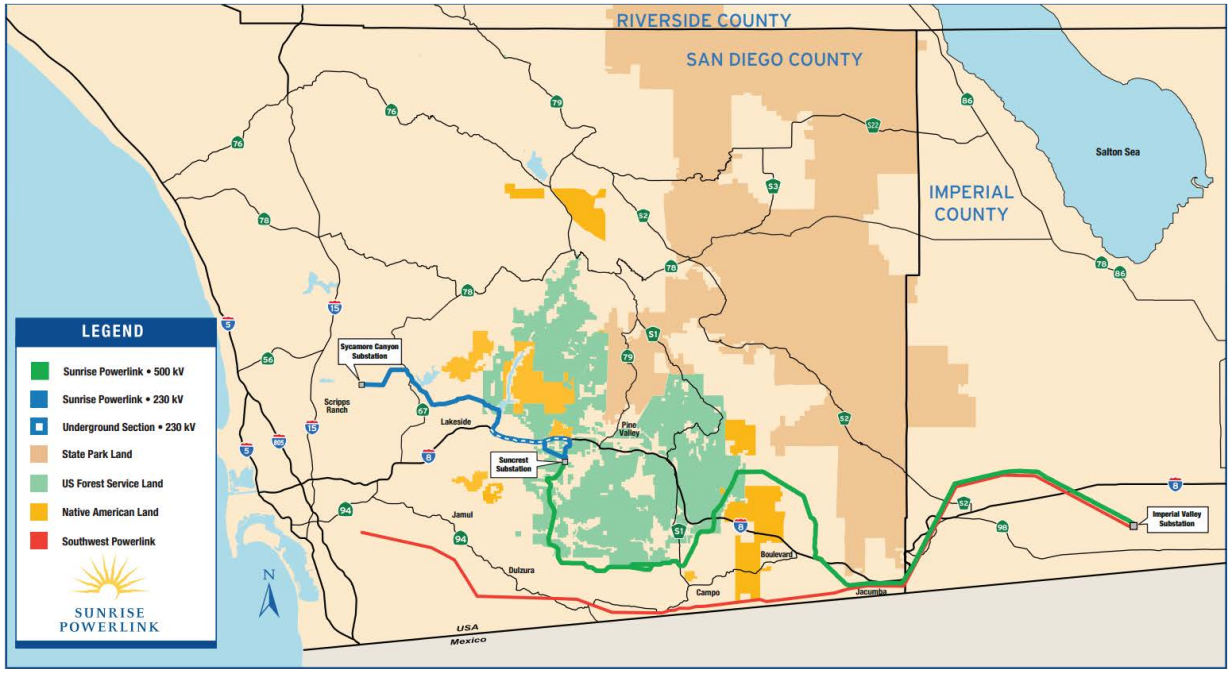


IMAGE CREDIT: SDG&E

3 Renewables target has since been made more ambitious. *Renewables Portfolio Standard (RPS) Program.* (n.d.). California Public Utilities Commission.

4 California Independent System Operator. (2006, August 4). *Phase 1 Opening Brief of the California Independent System Operator Corporation.* In the Matter of the Application of San Diego Gas & Electric Company (U 902 E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project.

5 CAISO is the independent system operator for California and is responsible for operations of the electric transmission system, the power markets, and the interconnection of utility scale power generation.

6 See page 6; California Independent System Operator, San Diego Gas and Electric Company, Southern California Edison Company, and the California Energy Commission. (2001, May 18). *Joint Testimony on Behalf of the California independent System Operator, San Diego Gas and Electric Company, Southern California Edison Company and the California Energy Commission.*

7 Cave, D. *Sunrise Powerlink.* SDG&E.

neighboring San Diego County. Situated just east of San Diego County, Imperial County is a desert community with significant solar, wind, and geothermal resource potential. A transmission line capable of interconnecting these resources could deliver clean electricity to other parts of the Southern California grid. Studies show the Imperial Valley has over 42,000 megawatts of untapped renewable energy potential, with most—nearly 29,000 megawatts—coming from solar, while wind and geothermal could supply a combined 13,243 megawatts.[8] The 2,488 megawatts of potential geothermal capacity is particularly significant. The region has been ranked as the best spot in the country and the second best in the world for geothermal energy.[9]

The geography's renewable potential was a driving force behind the development of the Sunrise Powerlink line. SDG&E was not the only entity working to harness this potential. The Imperial Irrigation District (IID), a municipal utility in Imperial County not subject to CAISO's jurisdiction, and therefore not part of statewide transmission planning processes, had proposed a series of transmission upgrades to better connect its renewable resources to the rest of the state's grid. Citizens Energy was originally collaborating with IID on one such project, a transmission line running from the border of Imperial County to the line's eastern end at the Imperial Valley substation. These three groups – SDG&E, Citizens Energy, and IID – eventually came together to combine these competing and somewhat redundant projects.[10]

This resulted in the development of a 117-mile, 500/230 kilovolt line connecting SDG&E and IID service areas. Construction on the line began in 2010, and the line was completed and energized in 2012.[11] 69 miles traverse federal land (19 of which pass through the Cleveland National Forest), seven miles cross state and local agency land, and 30 miles are on private property. The line crosses over Interstate 8 five times. The six miles of the line within Alpine, California were built underground, while all other portions were installed overhead.

The benefits discussed in this case study apply to the "Border-East" segment of the line, which runs east from the border of Imperial County to the Imperial Valley substation. The substation is co-owned by SDG&E and IID.

About Citizens Energy Corporation

Citizens Energy is a nonprofit founded in Boston in 1979 by former U.S. Representative Joseph P. Kennedy II, aimed at making energy more accessible and affordable. The nonprofit develops and operates a range of energy projects across the U.S., including solar, battery storage, and transmission. Citizens Energy reinvests profits from its projects into programs that provide energy assistance and community benefits for low-income and marginalized communities where projects are hosted.[12]

8 Summit Blue Consulting, LLC (2008). *Renewable Energy Feasibility Study Report.*

9 Imperial Valley Economic Development Corporation. (n.d.). *The Next Renewable Energy Capital of the World.*

10 Citizens Energy Corporation. (2006, March 20). *Greenpath And Sunrise To Link.*

11 California Public Utilities Commission. (n.d.). *San Diego Gas & Electric Company's Sunrise Powerlink Project.*

12 Citizens Energy Corporation. (2025, May 27). *Citizens Energy Corporation.*

IMPERIAL COUNTY COMMUNITIES

The Sunrise Powerlink line passes through a wide swath of Southern California – the agricultural and energy hub of the Imperial Valley; the highly rural, unincorporated communities of Jacumba, Boulevard, and Campo; the suburban areas of Alpine and Lakeside; and Sycamore Canyon in San Diego County. However, because Citizens Energy's investment focused on the portion of the line that began at the Imperial County border, it was the residents of Imperial Valley who were the sole intended beneficiaries of the community benefits framework.

Several Native American Tribes, including the Kumeyaay, Cocopah, Quechan, Mojave, and Hulapai, consider the land the Sunrise Powerlink line crosses as culturally significant.[13] The Santa Ysabel Band of Diegueno Indians expressed that development of the line could harm ancient burial grounds and artifacts spread throughout the proposed geography.[14]

FIGURE 2:

Aerial View of Imperial County with Cities of Imperial and El Centro Visible

PHOTO CREDIT: WIKIMEDIA COMMONS USER: APOXYOMENUS

13 Guidi, R. (2011, January 5). *Imperial Valley Tribes Oppose Sunrise Powerlink.* kpbs.

14 Santa Ysabel Band of Diegueno Indians, & Lomayesva, D. R. (2007, June 14). *Re: Comments Regarding "Modified Route D Alternative". California Public Utilities Commission.*

Imperial County is demographically diverse with strong cross-border ties with Mexico. At the time the power line came into service in 2012, the county population was around 176,500 and about 80% Hispanic. The city of El Centro is the largest city and the county seat and serves as the primary hub for community services. Agriculture plays a significant role in the region's economy – the county produces half of the nation's winter vegetables[15] – and at the time accounted for 48% of the region's employment.[16] Crop production in the region relies on a considerable amount of water from the Colorado River via an irrigation canal.

Imperial County struggles with high poverty and unemployment rates. In 2011, the county had the highest unemployment rate in the state (27.7%), due in large part to the seasonal nature of the region's agricultural work.[17] Despite being an agricultural powerhouse, the Imperial Valley has one of the highest food insecurity rates in California.[18] The median household income at that time was $37,946, while nearly 37% of the population had household incomes of less than $25,000 per year.

The region is also heavily polluted, and Imperial County has struggled to address longstanding impacts to the region's air and water. A prominent example of this is the Salton Sea, California's largest inland body of water. According to archaeologists and historians, thousands of years ago, the Salton Sea was the site of the largest body of water in the continental United States, but in recent centuries the site of the original sea had become a desert.[19] In 1905, a breached irrigation canal created the modern iteration of the "sea." Water draining from surrounding agricultural activities, contaminated with chemicals from pesticides and other agricultural processes, has helped to maintain the sea's basin. However, dwindling water levels from temperature increases and precipitation decreases due to climate change has shrunk the new sea to a sliver of what it once was, and the sea's salt concentration is 50% higher than that of the ocean. Its sprawling dry banks are filled with contaminants from more than a century of agricultural and stormwater runoff and biological material from the mass death of animals unable to sustain life in the sea's high salinity environment. During frequent dust storms this hazardous material gets whipped up into the air over the surrounding communities, causing significant respiratory and other health impacts.

DEVELOPING THE CITIZENS MODEL

The eastern portion of the line, proposed to run through Imperial County, was not in SDG&E's service territory but rather in IID's territory.[20] Proposals for competing lines running through two counties and utility jurisdictions presented opportunities to find creative ways to provide local benefits and make the project more appealing to Imperial Valley residents while delivering renewable-generated electricity to the San Diego region.

Early Conversations About a New Model

IID was developing a series of "Green Path" projects that would upgrade transmission lines in its service territory to enable the interconnection of generators developed around the region's vast renewable energy resource potential. Viewing this project as critical for successful deployment of large-scale clean energy projects, Citizens Energy approached IID with a partnership proposal that it believed would help facilitate community acceptance and demonstrate tangible local benefits beyond property taxes, job creation, and renewable energy development. The contours of the partnership were that Citizens Energy would pay for part of the line running through Imperial County while IID would shoulder the rest of the costs. The profits that Citizens Energy received would then be used to develop programs for low-income residents near the project.

15 *Welcome to Imperial County*. Imperial County. (n.d.).

16 *Community.* El Centro Chamber of Commerce & Visitors Bureau. (2010, November 3).

17 Dacre, S. (n.d.). Fast Facts about Imperial County.

18 *Need in Imperial Valley.* Imperial Valley Food Bank. (n.d.).

19 PBS. (2023, April 1). The Salton Sea: Life and death in an inland ocean. In the Americas with David Yetman.

20 IID and CAISO coordinate on transmission, distribution, and generation planning, but IID is responsible for meeting its own energy and capacity resource needs and serving a balancing authority role for its customers.

While the IID Green Path proposals were in development, SDG&E was developing its Sunrise Powerlink project. Separate and distinct from the Green Path project, the Sunrise Powerlink project aimed to tap into similar resources in the Imperial Valley. Local media at the time reported the Citizens Energy and IID-proposed line and SDG&E's proposed line east of the Imperial County border were redundant – that building both projects independently would not make sense.[21]

These events led IID, Citizens Energy, and SDG&E to engage in discussions around a development partnership. SDG&E, however, was skeptical of working with a non-traditional investor like Citizens Energy, as the arrangement would require SDG&E to share closely held financial returns with a non-utility third party. The partnership would also dilute the total amount invested by SDG&E, which would limit how much the utility could profit from development of the project. Citizens Energy, however, emphasizing its important role in derisking the project and increasing community support, stressed throughout negotiations that 100% of profits from a project that is never built is much worse than keeping 90% of a project that gets built.[22]

SDG&E appreciated Citizens Energy's ability to inject new competition and fresh ideas into a typically uncompetitive market, citing existing efforts by Citizens Energy to spearhead other transmission partnerships outside the status quo in the area, including with the Western Area Power Administration, that would lead to more renewables deployment and potentially benefit local communities and transmission stakeholders.[23]

SDG&E ultimately acknowledged that a partnership with Citizens Energy could improve community sentiment toward the project and help demonstrate and make more tangible benefits from the line. Citizens Energy did publicize the project, attending stakeholder meetings throughout the scoping process to explain the broader benefits of the transmission line as well as specific benefits their involvement would bring. When considering community outreach, "[Citizens Energy] spent a lot of time in Imperial County, working with the elected officials and the stakeholders [there]."[24]

SDG&E also found that a partnership with Citizens Energy could yield tangible benefits to the utility business and the customers that it serves, including that it would "enhance the development potential of renewable projects in [Imperial County]," and could thereby improve employment and broaden the tax base in the county.[25] SDG&E also posited that a Citizens Energy partnership would provide more rate certainty for customers on the Border-East segment because Citizens Energy would be "locking in all 100 percent of its required financing over 30 years as opposed to a traditional investor-owned utility's financing that would have half of its costs subjected to swings in the equity markets."[26]

Cementing the Unique Partnership between SDG&E and Citizens Energy

On March 16, 2006, SDG&E, IID, and Citizens Energy signed a memorandum of agreement (MOA) to coordinate development of the eastern segment of the project.[27] In August 2006, the CAISO Board of Governors approved the project, finding it would "lower costs for San Diego consumers and provide greater reliability benefits to San Diego, Imperial Valley and Southern California in general."[28] However, due in part to issues routing through IID service territory, IID ultimately backed out of the MOA in November 2007.[29] Citizens Energy and SDG&E opted to continue formalizing their partnership, and entered lengthy negotiations to hammer out the details of a new agreement.

21 Rose, C. D. (2006, January 29). Proposed power line generates lots of heat. *The San Diego Union-Tribune.*

22 As a point of clarification, the partnership was not framed to result in ratepayer savings.

23 See page 6, Pacheco, J.A. (2009, October 9). Application of San Diego Gas & Electric Company (U 902 E) for Approval Pursuant to Public Utilities Code Section 851 to Lease Transfer Capability Rights to Citizens Energy Corporation.

24 Interview with former SDG&E employee

25 See page 7, Pacheco, J.A. (2009, October 9).

26 See page 8, Pacheco, J.A. (2009, October 9).

27 Citizens Energy Corporation. (2006, March 20). *Greenpath And Sunrise To Link.*; See page 5, San Diego Gas & Electric. (2009, October 9). *Direct Testimony of James P. Avery, San Diego Gas & Electric Company.* Application of San Diego Gas & Electric Company (U 902 E) for Approval Pursuant to Public Utilities Code Section 851 to Lease Transfer Capability Rights to Citizens Energy Corporation.

28 California ISO Board Approves Sunrise/Greenpath Transmission Project. (2006, August 3).

29 See page 6, San Diego Gas & Electric. (2009, October 9).

Because this was a novel approach to transmission development, ownership, and rate recovery, there was uncertainty around how to structure the transaction, as well as concern around potential ratepayer impacts if cost recovery processes between SDG&E and Citizens Energy were set up inefficiently.[30] On May 11, 2009, SDG&E and Citizens Energy signed a Development and Coordination Agreement (DCA)[31] that ironed out the key points of concern between the two groups and outlined the core components of what we now know as the Citizens Model.

The DCA gave Citizens Energy the option to lease 50% of the transfer capability of the 500 kilovolt Border-East segment of the Sunrise Powerlink project in Imperial County for 30 years.[32] In exchange, Citizens Energy would be required to pay SDG&E $83 million in prepaid rent. To protect ratepayers, the DCA also established a model rate of return for Citizens Energy that incorporated capital cost recovery rates for SDG&E and Citizens Energy and built in ratepayer protections.[33]

FIGURE 3:
Sunrise Powerlink Construction

PHOTO CREDIT: CITIZENS ENERGY

30 See page 11, Pacheco, J.A. (2009, October 9).

31 San Diego Gas & Electric. (2009, May 11). Development and Coordination Agreement By and Between San Diego Gas & Electric Company and Citizens Energy Corporation.

32 San Diego Gas & Electric. (2009, May 11).

33 See page 4, Pacheco, J.A. (2009, October 9).

Gaining Approval from Federal and State Authorities

Allowing Citizens Energy to formally co-own a portion of a transmission line and collect revenues from the line's operation, which were key prerequisites to Citizens Energy's provision of local benefits, required a multistep set of approvals from CAISO, the California Public Utilities Commission (CPUC), and the Federal Energy Regulatory Commission (FERC). In October 2009, Citizens Energy filed two documents with both FERC and CPUC. The first was a petition for a declaratory order to seek FERC approval of the agreed upon capital cost recovery methodology and a capital structure of 50% debt and 50% equity – essentially asking FERC to approve in principle the rate that Citizens Energy would charge for use of its portion of the line. The second was a petition to the CPUC to approve Citizens Energy's 50% lease of transfer capability rights as laid out in the DCA.[34] In May 2011, CPUC approved the segment leasing structure,[35] and in December of the same year, FERC approved Citizens Energy's rate methodology request as just and reasonable, noting it had previously approved the same capital structure for municipals and other transmission construction projects.[36] The FERC decision also reiterated the importance of the line to electric reliability in San Diego.

On August 10, 2011, Citizens Energy applied to the CAISO Board of Directors to become a participating transmission owner on the line,[37] which CAISO approved in December of that year.[38] Upon CAISO's approval, and building on FERC's prior declaratory order, Citizens Energy was able to submit a proposed transmission owner tariff to FERC for cost recovery on its 50% share of "the cost of development, construction, and operation of the Border-East Line" which would effectively set the wholesale rate that it would charge to customers.[39]

After all these steps, Citizens Energy was officially a full partner to SDG&E on the Sunrise Powerlink project, and was permitted to "recover the just and reasonable costs of developing, financing, constructing, operating, and maintaining transmission assets and associated facilities" just like any other transmission operator.[40] Once it was able to profit from the line, Citizens Energy could put 50% of those profits "to programs serving low-income families in Imperial County," as it stated in several regulatory filings.[41] The remaining 50% is used by Citizens Energy to fund their nonprofit work, including development of future renewable and transmission projects.

34 California Public Utilities Commission. (2011, May 26). *Decision Granting Approval of Lease of Transfer Capability Rights from San Diego Gas & Electric Company to Citizens Energy Corporation.*

35 California Public Utilities Commission. (2011, May 26).

36 See page 8, Order on Transmission Rate Incentives and Capital Cost Recovery Methodology, 129 FERC ¶ 61,242 (2009, December 17).

37 Smith, P. F. (2011, August 10). *Citizens Sunrise Transmission LLC PTO Application and Proposed Transmission Owners Tariff.* California Independent System Operator.

38 California Independent System Operator Board of Governors. (2011, December 16). Decision on PTO Application.

39 Order Conditionally Accepting Initial Transmission Owner Tariff, Transmission Revenue Requirement, Tariff Capability Lease and Instituting Section 206 Proceeding, 138 FERC ¶ 61,129 (2012, February 21).

40 See page 38, California Independent System Operator. (n.d.). Amended and Restated Transmission Control Agreement Among The California Independent System Operator Corporation and Transmission Owners.

41 See for example, California Public Utilities Commission. (2011, May 31). Decision Granting Approval of Lease Transfer Capability Rights from San Diego Gas & Electric Company to Citizens Energy Corporation.

DETERMINING COMMUNITY BENEFITS

Once the line was constructed in 2012 and Citizens Energy started turning a profit, Citizens Energy reinvested the money it earned back into the community. The company's intention was to find a way for residents to directly benefit from the availability of cheap clean energy resources in the region. The nonprofit first developed the Solar Homes program, a residential rooftop solar assistance program, where it installed over 580 rooftop systems on low-income homes in Imperial County.[42] Challenges arose with the program, however, in part because the low-income residential customers Citizens Energy hoped to support were often renters instead of homeowners and therefore could not self-elect to install systems on their buildings.

Citizens Energy then began working closely with IID, which was also involved in the Solar Homes Program, to explore other approaches.[43] This led IID and Citizens Energy to partner on the development of the Imperial Valley Solar project, a 39-megawatt low-income community solar facility – generating enough electricity to power 12,000 homes – built using profits from the Sunrise Powerlink line.[44] The project was completed in 2019 at a cost of $46 million and is the largest low-income community solar project in the country.[45] **The cost of the energy is the lowest that IID had ever been able to procure for solar and will provide over $4.5 million per year of electricity savings over the 23-year life of the project.[46]**

IID had an existing Residential Energy Assistance Program[47] and created more savings for qualified low-income electric customers through monthly discounts on electric bills. The contractor hired to engineer, build, and operate the project, DEPCOM, also committed to local hiring and was able to hire 90% local for its building and construction positions, which created 300 jobs in total, 20% of which went to veterans.[48]

FIGURE 4:

Recipients of Rooftop Solar from the Solar Homes Program in Imperial County

PHOTO CREDIT: CITIZENS ENERGY

FIGURE 5:

Citizens Energy President Joseph P. Kennedy III with Elected Officials from Across Imperial County

PHOTO CREDIT: CITIZENS ENERGY

42 Citizens Energy Corporation. (n.d.). Citizens Transmission.

43 Though IID had dropped out of the MOA, they were still responsible for managing interconnection requests for the Solar Homes Program.

44 Citizens Energy Corporation. (n.d.). Citizens Imperial Valley Solar.

45 IID. (2019, September 25). IID & Citizens commission community solar project dedicated to low-income customers. *News Releases*.

46 California Public Utilities Commission. (2025, January 31). Pacific Gas and Electric Company Application for Approval under Public Utilities Code Section 851 to Lease Entitlements to Transmission Projects to Citizens Energy Corporation Amendment to Prepared Direct Testimony.

47 LIHEAP Clearinghouse. (n.d.). Imperial Irrigation District.

48 DEPCOM Power. (n.d.). DEPCOM Completes One of the Largest U.S. Community Solar Projects for Low-Income Customers.

These programs, and the related benefits they created, accrued to the community years after the Sunrise Powerlink line went into service because Citizens Energy had to first recoup its initial investment before reinvesting money into any programs. Ultimately, more than a decade passed between when Citizens Energy first started developing the project and when it had sufficient funds to invest in the Imperial Valley Solar project.

FIGURE 6:

Joseph P. Kennedy II, Founder and Chairman, Citizens Energy and James C. Hanks, President, IID Board of Directors Sign Plan for the Solar Homes Program

PHOTO CREDIT: CITIZENS ENERGY CORPORATION

FIGURE 7:

Powering the Imperial Valley Community Solar Project

PHOTO CREDIT: CITIZENS ENERGY

A REPLICABLE APPROACH: RENEWED PARTNERSHIP ON THE SYCAMORE-PEÑASQUITOS LINE

SDG&E and Citizens Energy went on to partner on the development of the Sycamore-Peñasquitos line, a 15-mile-long line planned to integrate more renewable energy resources onto the grid and improve service reliability for 3.6 million San Diego County residents. The project was divided into several segments. The focus of this case study is "Segment B," an underground 11.5-mile 230 kilovolt section of line along existing roads and bridges.[49] Project construction began in January 2017, and the line was energized on August 30, 2018.[50]

Competitive Solicitation Process

The Sycamore-Peñasquitos line emerged out of the CAISO 2012-2013 Transmission Planning Process, which specified the transmission infrastructure necessary to meet California's RPS goals and addressed immediate reliability concerns following the sudden retirement of the San Onofre Nuclear Generating Station.[51] CAISO identified that a new line between the Sycamore and Peñasquitos substations would provide policy and reliability benefits consistent with

FIGURE 8:
The Sycamore-Peñasquitos transmission line, including Segment B

IMAGE CREDIT: PANORAMA ENVIRONMENTAL, INC.

49 San Diego Gas & Electric. (n.d.). Sycamore to Peñasquitos 230-kV Transmission Line.

50 Panorama Environmental. (2019). *San Diego Gas & Electric Sycamore-Peñasquitos 230-kV Transmission Line Post-Construction Monitoring Report.* California Public Utilities Commission.

51 California Independent System Operator. (2013, April 1). *Sycamore-Peñasquitos 230 kV Line Description and Functional Specifications Eligible for Competitive Solicitation.* 2012-2013 ISO Transmission Planning Process Phase 3 - Competitive Solicitation.

renewable energy and generation retirements, and mitigate mid- and long-term voltage and transmission facility loading concerns in the area.[52]

Unlike the development of the Sunrise Powerlink project, a product of traditional utility planning processes, the Sycamore-Peñasquitos project was part of a "competitive solicitation" bid to CAISO for a transmission need identified in its transmission plan.[53] It followed a 2010 FERC-approved change to CAISO's transmission planning process allowing project developers to apply to CAISO for approval to build the project, consistent with the project needs identified in the plan.[54] After publishing the 2012-2013 transmission plan in March 2013,[55] CAISO gave interested applicants from April to June 2013 to submit a proposal.[56]

Following the success of their previous collaboration on the Sunrise Powerlink project, SDG&E and Citizens Energy met several times to discuss the CAISO solicitation and the possibility of submitting a joint proposal. They felt their partnership and the broader community benefits model could provide distinct value and help differentiate their bid from other developers and submitted a proposal that reflected a substantially similar partnership arrangement from the Sunrise Powerlink project. Their intuition was validated when, in March 2014, the CAISO Board of Governors approved the proposal submitted by SDG&E and Citizens for the project.[57]

FIGURE 9:

Sycamore-Peñasquitos Transmission Line Construction

PHOTO CREDIT: CITIZENS ENERGY

52 California Independent System Operator. (2013). *2012-2013 Transmission Plan.*

53 California Independent System Operator. (2014). *Sycamore-Peñasquitos Project: Project Sponsor Selection Report.*

54 California Independent System Operator. (2015, October 12). *Competitive Solicitation Process Enhancements Draft Final Proposal.*

55 California Independent System Operator. (2013). *2012-2013 Transmission Plan.*

56 California Independent System Operator. (2013). *Sycamore-Peñasquitos 230 kV Line Description and Functional Specifications Eligible for Competitive Solicitation.*

57 California Independent System Operator. (2014). *Sycamore-Penasquitos Project Project Sponsor Selection Report.*; Affiliates of Abengoa T&D, Trans Bay Cable LLC, and Elecnor, Inc., also submitted proposals. See California Independent System Operator (2013, June 5). *2012-2013 Transmission Planning Process Project Sponsor Competitive Solicitation.*

REGULATORY APPROVALS AND OWNERSHIP STAKES

Once selected, SDG&E and Citizens had to secure regulatory approvals from both the CPUC and FERC. The approval process was very similar to what was required for the Sunrise Powerlink line.

One key difference was the ownership stake agreed upon by the two parties. In November 2017, SDG&E and Citizens Energy signed a Development, Coordination, and Option Agreement[58] to give Citizens Energy the option to lease 12.92% of the transfer capability of Segment B for 30 years. In exchange, Citizens Energy was required to pay SDG&E $27 million in prepaid rent, assume all operating costs related to its ownership stake in Segment B, and return operational control of the segment to SDG&E once the 30-year period elapsed.[59, 60]

Regulatory agencies now appeared to be more comfortable with this type of partnership as compared to when SDG&E and Citizens Energy sought approval for the Sunrise Powerlink project. Many of the FERC, CAISO, and CPUC orders and documents generated in the regulatory approvals process for the line reference the Sunrise Powerlink project, serving as testament to the groundbreaking nature of the Citizens Model.

FIGURE 10:
Sycamore-Peñasquitos Transmission Line Construction

PHOTO CREDIT: CITIZENS ENERGY

58 See Exhibit No. CEC-3; San Diego Gas & Electric. (2017). *Direct Testimony of Peter F. Smith, Citizens Energy Corporation Before the Public Utilities Commission of the State of California.*

59 Smith, P. F. (2018, February 22). Citizens Comments on S-Line Upgrade.

60 California Independent System Operator. (2018, April 13). Citizens Sycamore-Peñasquitos Transmission LLC Application to California Independent System Operator Corporation for Participating Transmission Owner Status.

SAN DIEGO COMMUNITIES AND NEIGHBORHOODS

The 15-mile transmission line traversed several San Diego area neighborhoods, including Scripps Ranch, Mira Mesa, Carmel Valley, and University City. Segment B of the project started in the vicinity of Scripps Ranch and traveled through a commercial area of Mira Mesa.[61] There was significant opposition along this route as briefly described in this section. While SDG&E managed community engagement efforts for the line, it is unclear if or how Citizens Energy directly engaged with communities experiencing construction or visual impacts, and whether Citizens Energy consulted these communities in developing the community benefits mechanisms that would later accrue to local nonprofits.

Scripps Ranch is a wealthy enclave of about 21,000 people situated in the northeastern part of San Diego. The Scripps Ranch Civic Association and the Scripps Ranch Planning Group engaged with SDG&E on the project. As reported in local media at the time, the community expressed concern about visual impacts from where the line transitioned from overhead to underground.[62] Once the project was underway, the community grew frustrated with SDG&E's communication. Residents impacted by construction told media outlets that "they did get notices of the project but had no idea [transmission infrastructure] would now be included in their view," that overhead components were "significantly taller" than they were led to believe, and that they had understood the new transmission line would be installed underground – perhaps not anticipating a transition point between the overground and underground infrastructure.[63, 64]

Mira Mesa is a San Diego neighborhood of about 80,000 people.[65] The original SDG&E project proposal, filed in 2014

FIGURE 11:
Scripps Ranch

PHOTO CREDIT: RYAN CASEY AGUINALDO

61 See page 2, California Independent System Operator. (2018, April 13). Citizens Sycamore-Peñasquitos Transmission LLC Application to California Independent System Operator Corporation for Participating Transmission Owner Status.

62 Matthews, A. (2017, November 1). *New transmission line project in Scripps Ranch causes anger among neighbors.* NBC San Diego.

63 Matthews, A. (2017, November 1).

64 *Residents seek to beautify parkway.* Scripps Ranch News. (n.d.).

65 *Mira Mesa.* City of San Diego Official Website. (n.d.).

with CPUC, envisioned the Sycamore-Peñasquitos project to be built north of Mira Mesa through the Rancho Peñasquitos and Del Mar Mesa communities.[66] However, CPUC deviated from the proposed route and selected an alternative route, deeming the new route as the "Environmentally Superior Alternative" in the final Environmental Impact Report issued in March 2016.[67] CPUC acknowledged in this report that the selected alternative would "result in greater temporary significant and unavoidable air quality impacts than the [original proposal], from NOx emissions generated during construction," but still declared the route environmentally superior because it eliminated other "significant and unavoidable" impacts, including noise pollution, degradation of recreational areas, and erosion and wildfire risks.[68]

Mira Mesa is home to a variety of community groups, including the Mira Mesa Community Planning Group (MMCPG), which makes advisory recommendations to the city and other governmental agencies on neighborhood land use matters, works with the city on development of the Mira Mesa Community Plan, and evaluates proposed projects for consistency with that plan."[69] MMCPG met regularly to discuss the Sycamore-Peñasquitos project at their meetings between March 2016 and February 2017.[70] Two such meetings discussed an open house that SDG&E held for the community on February 15, 2017 which saw 45 people in attendance.[71]

According to MMCPG, SDG&E held several hearings for the first proposed route that went north of Mira Mesa, and received several objections to the proposed route.[72] At the time of the last update of its webpage, MMCPG reported that no hearings had been held by SDG&E in Mira Mesa on the new route despite outstanding construction impact concerns from many businesses on Miramar Road.[73]

FIGURE 12:

Sycamore-Peñasquitos Transmission Line Construction

PHOTO CREDIT: CITIZENS ENERGY

66 California Public Utilities Commission. (2014, April 7). Application of San Diego Gas & Electric Company (U 902 E) For a Certificate of Public Convenience and Necessity for the Sycamore-Penasquitos 230 Kilovolt Transmission Line Project.

67 California Public Utilities Commission. (2014, April 7). Decision Granting Certificate of Public Convenience and Necessity for the Sycamore-Peñasquitos 230 kV Transmission Line Project.

68 California Public Utilities Commission. (2016). *Sycamore-Penasquitos 230-kV Transmission Line Project Final Environmental Impact Report.*

69 Mira Mesa Community Planning Group - MMCPG. (n.d.).

70 *MMCPG Minutes.* Mira Mesa Town Council. (n.d.).

71 See District 6 Communications Chris Cate. (2017, February 2). *San Diego Council District 6.* Nextdoor.; Mira Mesa Town Council. (2017, February 23). Mira Mesa Community Planning Group Meeting Minutes.; Mira Mesa Town Council. (2017, January 19). Mira Mesa Community Planning Group Meeting Minutes.

72 Mira Mesa Community Planning Group - MMCPG. (n.d.).

73 Mira Mesa Community Planning Group - MMCPG. (n.d.).

DETERMINING COMMUNITY BENEFITS

On November 9, 2017, SDG&E and Citizens formalized their new partnership in a "Development, Coordination, and Option Agreement."[74] The Agreement included a financing and benefits structure similar to what was used for the Sunrise Powerlink project – **Citizens Energy committed 50% of its profits earned from the line to "low-income ratepayers and disadvantaged communities in San Diego County."**[75] At the time of development, California was ramping up its efforts to electrify the transportation sector, a push that was felt acutely in San Diego County.[76] In interviews, Citizens Energy relayed that it had decided to focus its community investment on ensuring low-income residents benefit from the transition to electric vehicles.

The nonprofit reported meeting and discussing this idea with local leaders and elected officials, who were generally supportive. According to Citizens Energy, there was a great deal of interest from local leaders and organizations in an electric vehicle program designed to help low-income residents in San Diego County: "There's a fairly long list of organizations who want these things, and a fairly long list of elected leaders who say … can you put this organization on your list because they're important to me and … they have a … vehicle fleet that would be great to electrify."[77]

Implementation to Date and Local Nonprofit Support

Community benefits and funding were structured to be doled out annually over the duration of the 30-year lease agreement. As of January 31, 2025, Citizens Energy provided $2.5 million toward the purchase of electric vehicles and

FIGURE 13:
Event Celebrating the Donation of Electric Vehicles to National Homes Association

PHOTO CREDIT: CITIZENS ENERGY

74 See page 107, San Diego Gas & Electric. (2017). *Direct Testimony of Peter F. Smith, Citizens Energy Corporation Before the Public Utilities Commission of the State of California.*

75 See page 11, San Diego Gas & Electric. (2017). *Direct Testimony of Peter F. Smith, Citizens Energy Corporation Before the Public Utilities Commission of the State of California.*

76 Interview with Citizens Energy

77 Interview with Citizens Energy

associated charging stations for several local nonprofits.[78] Outdoor Outreach, a nonprofit that helps youth from San Diego access Southern California's outdoor spaces, received two electric transit vans from Citizens Energy. Other beneficiaries include Meals on Wheels San Diego County, a nonprofit that delivers meals to seniors and veterans, which received financial assistance to help with the purchase of six electric vehicles, the Neighborhood House Association, San Diego Canyonlands, and two nonprofit Native American Health Centers. When Pacific Gas & Electric, another California utility, applied to CPUC to lease entitlements for some of its transmission upgrade projects to Citizens Energy in 2024, it included success stories from these nonprofits in testimony documents, and several of the San Diego groups spoke up in support for the utility's application based on their positive experience working with Citizens Energy.

In an interview for this case study, a previous SDG&E employee shared that the project involved interacting with many different organizations: "We dealt with a number of not-for-profit organizations in San Diego towards supporting this project and we gained a lot of support in the region for what we were trying to do overall."[79] Whenever SDG&E faced a problem, the utility consulted stakeholders – bringing in unions, the county, and different cities, ultimately earning their trust and support.[80] Former SDG&E employees also credit on-the-ground engagement techniques for the project's success, which stemmed from **"getting the community involved, getting community groups involved, getting the county, getting non-traditional supporters into this overall effort. [They] worked tirelessly, and we could not have done this work if we did not involve non-traditional partners. This is completely different than the way we have approached projects historically."[81]**

FIGURE 14:

Event Celebrating the Donation of Electric Vehicles to Meals on Wheels

PHOTO CREDIT: CITIZENS ENERGY

78 This paragraph broadly references information found in the following document: California Public Utilities Commission. (2025, January 31). Pacific Gas and Electric Company Application for Approval under Public Utilities Code Section 851 to Lease Entitlements to Transmission Projects to Citizens Energy Corporation Amendment to Prepared Direct Testimony.

79 Interview with former SDG&E employee

80 Interview with former SDG&E employee

81 Interview with former SDG&E employee

CONCLUSION

SDG&E and Citizens Energy worked together to develop a unique transmission line co-ownership model that was intended to offset project development harms and deliver benefits to the community. These entities built upon a successful partnership on the Sunrise Powerlink line to again deploy the Citizens Model as part of their successful competitive bid for the Sycamore-Peñasquitos line.

The Citizens Model provides community benefits and services on an ongoing basis by supporting local nonprofits around the transmission lines. The development of the ownership and financing model required regulatory creativity at state and federal levels, close coordination between SDG&E and Citizens Energy, and flexible partnerships with local stakeholders, including the municipal utility IID.

The level of direct engagement with the community during the formation of this model is still unclear – from research conducted for this case study, it appears that the benefits model took a "top-down" approach, where SDG&E and Citizens Energy made decisions on benefit recipients and benefit types with some input from communities and elected officials. In interviews, Citizens Energy noted that it researched and scoped what was important to communities and that research informed its investment strategy. Because communities are actively engaged with and impacted by energy infrastructure projects in their backyards, moving away from a "top-down" determination of benefits in future agreements and toward more community-centric approaches is recommended to acknowledge community needs and concerns while getting infrastructure built.

This case study also highlights the challenges and nuances of investor-owned utilities recuperating costs for community benefits programs and initiatives from ratepayers. One could argue the SDG&E and Citizens Energy partnership, and promise of providing community services, made possible the construction of a line that would deliver clean electricity from a high-potential region to a congested area with reliability challenges, potentially putting downward pressure on rates in the San Diego area. But at no point did the entities involved promise ratepayer savings from their partnership, and community services provided by Citizens Energy are still subsidized by SDG&E ratepayers. Current affordability challenges in California and across the country can intersect and conflict with benefits models that fairly and comprehensively compensate communities for hosting infrastructure. This tension, and how to address it, is ripe for further research.

The Citizens Model continues to live on in California. It was used as the inspiration and regulatory precedent for a first-of-a-kind partnership between a Native American Tribe and a California utility, and is being used once again by Citizens Energy, this time in a potential partnership with Pacific Gas & Electric.