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Texas Wind and Solar Renewable Energy Development Timelines: From Local Incentives to Commercial Operation

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Abstract

This working paper presents findings from an effort to reconstruct public development timelines for large wind and solar projects in Texas, a state with a significant renewable energy portfolio. We assembled a dataset of project milestones for 32 wind projects and 44 solar projects between 2018 and 2025 across 58 counties, using public records from county commissioners' courts, school districts, Texas Comptroller files, developer announcements, and other project-specific sources. Our analysis finds that Texas's renewable energy development often proceeds quickly when compared with projects on federal land and many state-level permitting processes. The median observable development timeline in the sample is roughly 3.5 years, and approval timelines for local tax incentive programs average about 6.5 months for solar projects and 7.5 months for wind projects. However, timelines vary widely with much of this variation occurring before construction, when developers assemble land, negotiate tax and road agreements, secure offtake contracts, procure equipment, and complete grid or federal reviews. These findings highlight the obstacles of drawing uniform conclusions about the success and speed of Texas's development model, and the need for better project-level data to compare complex renewable energy development timelines across jurisdictions.

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1. Introduction

The pace of renewable energy build-out is dependent on the timelines for permitting, construction, and grid interconnection. Although the US federal government serves as the primary "authority having jurisdiction" on federally owned land in any state or territory, only 3 percent of utility-scale renewable energy projects have been built on federal land, with the rest falling under local or state permitting authorities (Mai et al. 2025). The procedural hurdles that developers must satisfy—and the average time from project initiation to approval and the commencement of construction—vary widely between and even within states (Sud and Patnaik 2022).

Texas is a leading state in installed utility-scale solar and wind capacity (EIA 2025) and is often described as having relatively rapid energy development (Bitterman 2026). This perceived rapid pace of development is commonly attributed to the overall lack of process in Texas compared with other states. For example, Texas does not have a statewide siting and permitting process, and it is the only state where county authorities are precluded from imposing zoning requirements in unincorporated areas (Breckel and Falkenburg 2025).

The absence of a statewide process in Texas, however, has made it challenging to formally assess project timelines, and we are unaware of previous systematic efforts to do so. Here we address this data gap through a data collection effort spanning multiple disparate sources for project development milestones for 44 large (>200 megawatts (MW)) solar and 32 large (>150 MW) wind projects constructed between 2018 and 2025 across 58 Texas counties. In this working paper, we report our findings and provide an overview of the development process for renewables in Texas. The full data are available in the supplementary materials.

We make the following observations about large-scale renewable energy development in Texas:

- Project development timelines (measured from first public documentation to commercial operation) are faster in Texas than on federal lands. The median development timeline in our sample is roughly 3.5 years, approximately 40 percent faster than projects on federal lands (Fraas et al. 2025).
- Local tax abatement approvals, serving here as a comparison for permitting processes, are faster in Texas than the average permit approvals for states reviewed in Nilson et al. 2026. Approvals take an average of 6.5 months for solar and 7.5 months for wind, versus approximately 12 months on average in other states.
- Timelines for planning, permitting, and construction vary within and between project types. Nine wind and solar projects took less than two years to operation, but 21 projects exceeded four years. The standard deviation of wind project timelines (19 months) is approximately 50 percent higher than that of solar projects (13 months).

- Many steps in the development process are hard to trace because local government records are sometimes lacking. The processes are not mandated by regulation and thus vary by project and location and are frequently nonpublic. Why data on certain steps are missing—and what the process for project build-out is—remains a challenge for understanding the drivers and outcomes of timelines in Texas.

2. Constructing a Paper Trail

Tracking the development process for Texas renewable energy projects requires sorting through an unorganized and unsystematized field of documentation for each project. Some states have a centralized pathway for permitting large renewable projects, such as **New York's Office of Renewable Energy Siting and Electric Transmission**, or the optional **California Energy Commission certification pathway**. Texas, in contrast, permits all projects, regardless of their size and characteristics, at the county level. As a result, Texas does not have a comprehensive siting board or similar governance entity. Texas project records often appear in county commissioners court agendas, school district files, Comptroller Chapter 313 pages, Electric Reliability Council of Texas (ERCOT) records, and Public Utility Commission of Texas (PUCT) filings, as well as developers' announcements.

To identify projects for our sample, we used the **Energy Information Agency (EIA) Form 860** filings data that are required of existing and planned electric power stations in the United States with a capacity above 1 MW. We used the 105 solar and 72 wind projects operating in Texas between 2018 and 2025 as the universe of projects to examine. We next limited our sample by capacity to make project-level data gathering feasible. Our sample includes all wind projects with capacities over 300 MW, a sample of wind projects between 150 and 300 MW, and all solar projects over 200 MW. This yielded 32 wind projects and 44 solar projects for investigation, representing 58 of the 254 total counties in Texas, comprising 31 counties with wind projects, 21 with solar projects, and six with both.[1] Our sample includes 25 percent of the **total Texas wind capacity** (10.9 gigawatts (GW) out of 43.9GW) and 38 percent of **total Texas solar capacity** (12.5 GW out of 32.7 GW). For many projects, data were unavailable for some steps (as described below), so some figures and results in the main text are limited to a subset of projects. All project data are included in the supplemental materials.

Documents for each project in our sample were identified through a manual web search using key words, including project name, limited liability company (LLC), aliases, county, school district, and developer. County government and Texas Comptroller records were searched using "abatement," "reinvestment zone," "commissioners court," "public hearing," "order," "agreement," "Chapter 313," and other terms.

1 We note that starting from EIA 860 provides a plausibly complete set of real operating generators with comparable capacity, technology, location, and operating-year fields, but it also creates selection bias because the operable-unit data captures projects that actually reached operation and only a limited selection of projects that were proposed, delayed indefinitely, canceled, or rejected. Our timeline analysis therefore likely understates the full difficulty of development by excluding failures and stalled projects, and results should be interpreted accordingly.

For each project we recorded important steps ("milestones") in the development process (described below in more detail), using file date stamps, meeting dates, executed agreement dates, hearing notice dates, agenda items, government registry entry dates, and other information. Only milestone dates about which we were reasonably confident were recorded. Partial dates were labeled as approximate to avoid overstating precision. Many projects have gaps in the timeline due to incomplete documentation; for example, no public notice was given, archives were publicly undiscoverable, project data were recorded under a different project name, or permits were not required to build the project. For each project, we searched for and documented the following milestones in the Texas development process. We define these examples below:

- **Public hearings**, and notice for those hearings, are required for projects pursuing certain tax abatement programs (see below). Both notice and hearing dates are included in the full data in the supplemental materials. Not all projects had public hearings, but they are a legally mandatory step if the developer seeks the Chapter 312 tax breaks (see next bullet). We identified public hearing dates for 59 of the 76 projects.
- **Chapter 312 of the State Tax Code**, formally the **Property Redevelopment and Tax Abatement Act**, allows cities and counties to create special reinvestment zones that offer property tax exemptions for up to 10 years to support construction projects promoting local economic growth. We identified Chapter 312 approval dates and subsequent amendment dates for 42 projects.
- **Chapter 313 of the State Tax Code**, the **Texas Economic Development Act**, allows a school district to cap the taxable value of a project's maintenance and operations property tax for a 10-year period.[2] In Texas, school district taxes make up the largest portion of a property owner's tax bill (TTARA 2017), contributing 48.5 to 55 percent of total property taxes levied across the state. Under Chapter 313, the state Comptroller's office determines whether a project is legally and financially qualified for the tax cap based on mandatory job creation, wage, and investment thresholds; the school board holds the final vote to execute the contract. Chapter 313 expired at the end of 2022 and was replaced by the **Texas Jobs, Energy, Technology, and Innovation (JETI) Act** in 2024.[3] We identified Chapter 313 application and approval dates for 62 projects.

2 Regardless of construction cost, a project covered by Chapter 313 is taxed only on the fraction of its value set by the cap. This is separate from the Chapter 312 percentage discount applied to the county's portion of property taxes, since county governments do not collect school taxes.

3 JETI excludes renewable energy projects, including wind and solar, from eligibility. This could slow clean energy development in Texas because wind and solar made up about two-thirds of Chapter 313 agreements numerically, even though multibillion-dollar oil, gas, and petrochemical projects made up roughly 75 percent of the total dollar value of gross tax benefits awarded over the life of the Chapter 313 program. The new program is aimed at advanced manufacturing, dispatchable electric generation such as gas plants, hydrogen infrastructure, carbon capture, and other favored industrial categories. Rather than the flat taxable value cap under Chapter 313, JETI generally offers a 50 percent appraised value limitation, with a larger reduction for qualifying opportunity zone projects. Furthermore, JETI requires review and approval from the school board, Texas Comptroller, and Office of the Governor rather than the more direct negotiation between a developer and a local school board allowed by Chapter 313.

- **Road-use agreements** document how developers will use, upgrade, maintain, repair, or restore county roads affected by project construction traffic, especially heavy equipment deliveries. In Texas, these agreements are typically required or negotiated by county governments, most often through the county commissioners court or the county road and bridge officials, since counties are responsible for protecting local road infrastructure in unincorporated areas. We looked for these agreements in county commissioners court agendas and minutes, road and bridge department materials, and county order packets, among other sources. We identified road-use agreement approval dates for 23 projects.
- **Power purchase agreements (PPAs)** identify when a project secured a buyer for its electricity, which can be an important marker that a project has moved from speculative development toward financeable construction. PPAs are rarely identifiable through county records, instead being found in developers' press releases, utility announcements, corporate sustainability reports, project financing announcements, and occasionally trade press coverage. We identified dates when the developer signed a PPA for 33 projects.
- **Equipment procurement records** capture when major project components, such as wind turbine blades, turbine towers, solar panels, inverters, or battery components, were sourced, delivered, or installed. These milestones are challenging to verify because procurement is often handled through private contracts. We looked for this information in developers' announcements, contractors' materials, suppliers' press releases, import or trade reports where available, construction updates, and other project milestone filings. We identified dates when equipment was procured for 30 projects.
- **Federal agency permits** include approvals or reviews by agencies such as the Federal Aviation Administration (FAA) and Department of Defense (DOD), and sometimes federal environmental review processes, even for projects developed on private land. For wind projects especially, we looked for **FAA determinations of no hazard**, **DOD siting clearinghouse mitigation agreements**, and other federal registry materials. Sources included FAA obstruction evaluation records, DOD mitigation agreement postings, *Federal Register* or GovInfo filings, and project-specific federal docket materials. We found federal permit approvals for only nine projects in our sample.
- **Start of construction** marks the point when a project moves from permitting, financing, and local approval to physical site work or major construction activity. This date was sometimes directly stated in developers' press releases, contractors' materials, county filings, school district Chapter 313 documents, or project milestone reports. In other cases, construction start dates were inferred from public meeting records, notices to proceed, financing announcements, or county road-use approvals. We identified construction start dates for 49 projects.
- **Date of commercial operation** is when a project begins operating or is declared commercially online. This milestone in the timeline allowed us to measure total observable development duration. We looked for commercial operation dates in developers' press releases, EIA operating records, ERCOT or interconnection-related materials, project milestone reports, trade press reports, asset owner announcements, and sometimes public filings that confirmed the project had entered service. We identified commercial operation dates for 75 projects.

The milestones above were included in the data set because they were visible in the public record with project-specific dates and useful for observing the sequence from early development to commercial operation. Chapter 312 and Chapter 313, for example, are property-tax incentive processes that are not legally mandated but are often required for a project to be financially viable. Developers lead these processes, conducting all the upfront capital work independently, including scouting and selecting the appropriate county, gathering data on geographic suitability for renewable energy infrastructure, and often spending a year or more negotiating land leases with private landowners. The need to renegotiate and amend existing Chapter 312 and Chapter 313 agreements was common across both wind and solar projects, with some developments requiring two or more rounds of amendments that may have pushed commercial operation dates back by several quarters or more than a year.[4] Some permits, such as road access permissions for construction, were frequently rolled into Chapter 312 agreements and negotiated as terms of the broader tax abatement package. These road access provisions were more likely than other permits to appear in county materials, which is why they were included in the timeline data set when a clear approval date could be found.

The sequence of dates for a project inevitably obscures the complexity of achieving the milestones. In Appendix A we provide a detailed case description for Foard City Wind Farm, to illustrate the complexity of permitting processes.

Our data set of milestones captures the public-facing development trail rather than every legal requirement that a developer must satisfy. Several other mandatory state, county, and grid-related permits or regulatory clearances (discussed below) are required before construction or operation but are excluded from our data set because they lack public visibility or cannot easily be attributed to a specific project name or developer. Future data collection efforts could focus on these additional milestones:

- A **Texas Pollutant Discharge Elimination System (TPDES) permit** requires submitting a detailed stormwater pollution prevention plan to the Texas Commission on Environmental Quality (TCEQ) outlining how the project will mitigate soil erosion and runoff into local watersheds before heavy machinery arrives.
- An **Air New Source Review (NSR) standard permit** is required for wind projects specifically because wind turbine foundations require the rapid pouring of thousands of tons of concrete. A developer that sets up a temporary, on-site concrete batch plant to mix raw materials must control dust and particulate emissions and obtain a permit from TCEQ.

4 Chapter 312 and Chapter 313 agreements are sometimes amended if a project changes after the initial approval. Common reasons include changes in project layout, changes in turbine or panel technology, revised capacity estimates, changes to the project footprint, ownership or developer changes, updated construction schedules, revised investment amounts, or changes needed to keep county and school district tax incentive boundaries aligned. In some cases, amendments also clarify reporting obligations, payment terms, or other agreement provisions after financing, procurement, or engineering decisions become more certain.

- Specific floodplain, drainage, and structural development permits may be required by county commissioners court mandates.
- A developer must **register the project subsidiary with PUCT**. The registration requires verified documentation of the facility's coordinates, ownership structures, and anticipated wholesale market operations.
- Developers must formally sign a **standard generation interconnection agreement** with the local transmission service provider. They must also clear **ERCOT's steady-state security modeling check** before starting construction to prove that substation infrastructure will not destabilize the grid.

3. Findings and Discussion

Our project-level data suggest substantial variability in project development timelines in Texas. We found that nine projects took less than two years of recorded development prior to operation, but 11 wind and 10 solar projects spanned more than four years of planning, permitting, and construction. Figure 1 shows wind projects indexed to the start of construction, and Figure 2 shows the results for solar projects.[5] Yellow bars indicate the preconstruction planning phase and green bars show the construction period. The symbols represent milestones. Each project's timeline begins at its first recorded milestone in our data set, which can vary based on data availability. Where a symbol at the start of a yellow bar is lacking, the first step was likely a public hearing or a notice of a public hearing—not marked on the timelines for readability. For both wind and solar, the longest development durations often reflect the time spent before construction, when developers assemble land leases or fee purchases, pursue local tax incentive approvals, negotiate road access, complete aviation review, finalize power sales, and coordinate grid milestones. A short visible timeline may reflect administrative speed but may also reflect fewer publicly visible records before the first documented county or school district action.

Figure 3 illustrates the average development duration and distribution of development durations for different categories of projects in our data set. The box plots show that the median duration for wind (~40 months), solar (~42 months), and the full sample (~42 months) is not meaningfully different, but the spread and upper tail vary across groups, with solar project development showing a tighter distribution (standard deviation of ~13 months) than wind projects (standard deviation of ~19 months).[6]

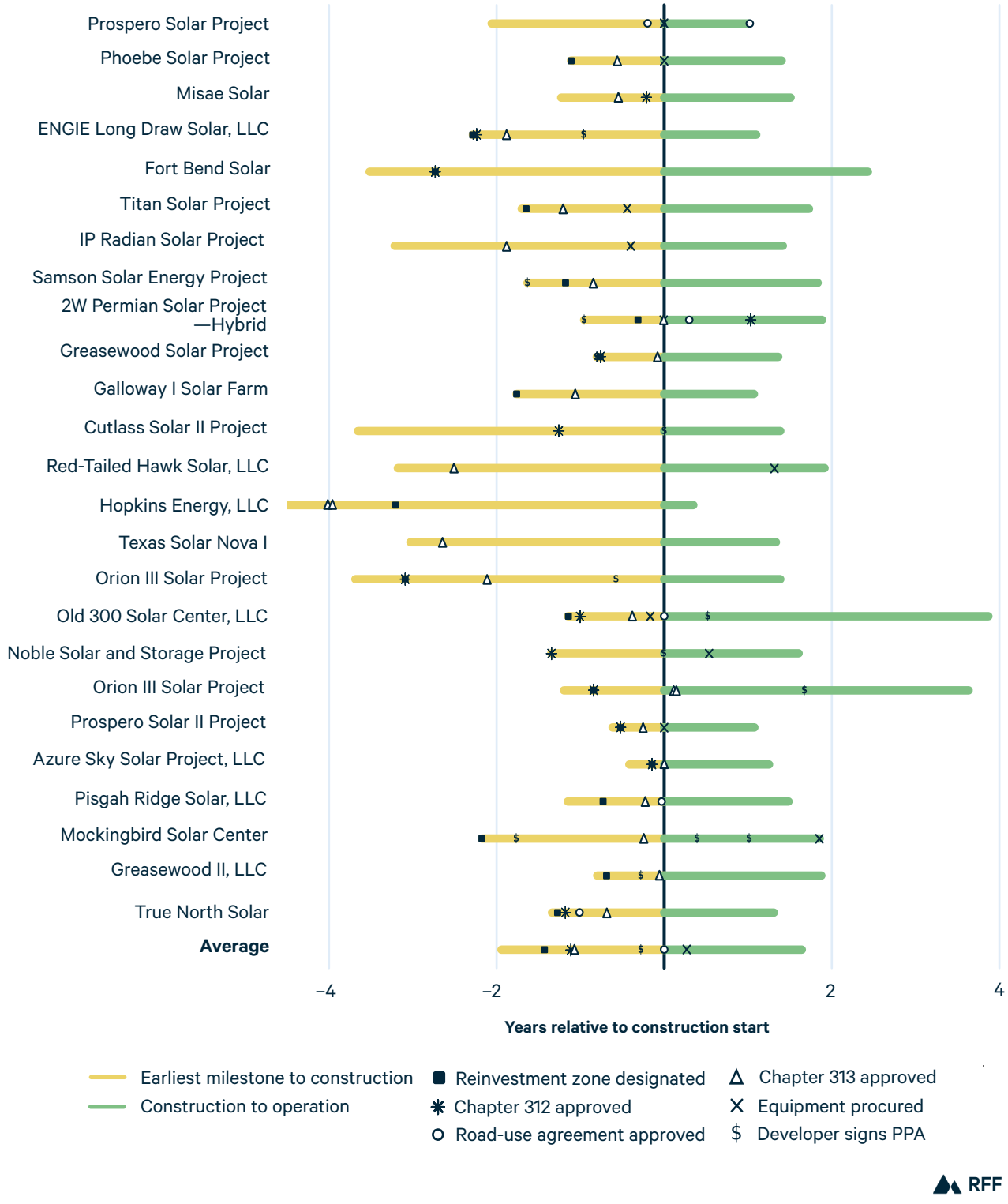
5 These figures show only those projects for which we have reliable construction dates; additional figures with the full sample of projects can be found in Appendix B.

6 For the restricted set of projects shown in the construction-indexed timeline figures, the results are broadly similar but not identical. For the 22 wind projects and 25 solar projects displayed in Figures 1 and 2, respectively, with recorded construction start dates and commercial operation dates, the median duration for total development was about 46 months for wind and 41 months for solar, compared with about 40 months and 42 months in the full boxplot sample. The standard deviations were about 18 months for wind and 15 months for solar, compared with about 19 months and 13 months in the full sample. Durations are measured from each project's earliest recorded milestone to commercial operation and converted to months, using 30.44 days per month.

Figure 1. Texas Wind Project Timelines Indexed to Construction Start

Note: Projects are ordered chronologically by first recorded milestone. Each project is indexed at zero, at construction start. Negative values represent the months before construction, and positive values represent the months after construction has begun. Construction and commercial operation symbols are omitted and are instead represented by the difference in bar color. Dates from vague entries, such as "Early 2024," are approximated for plotting only. PPA = power purchase agreement.

Figure 2. Texas Solar Project Timelines Indexed to Construction Start

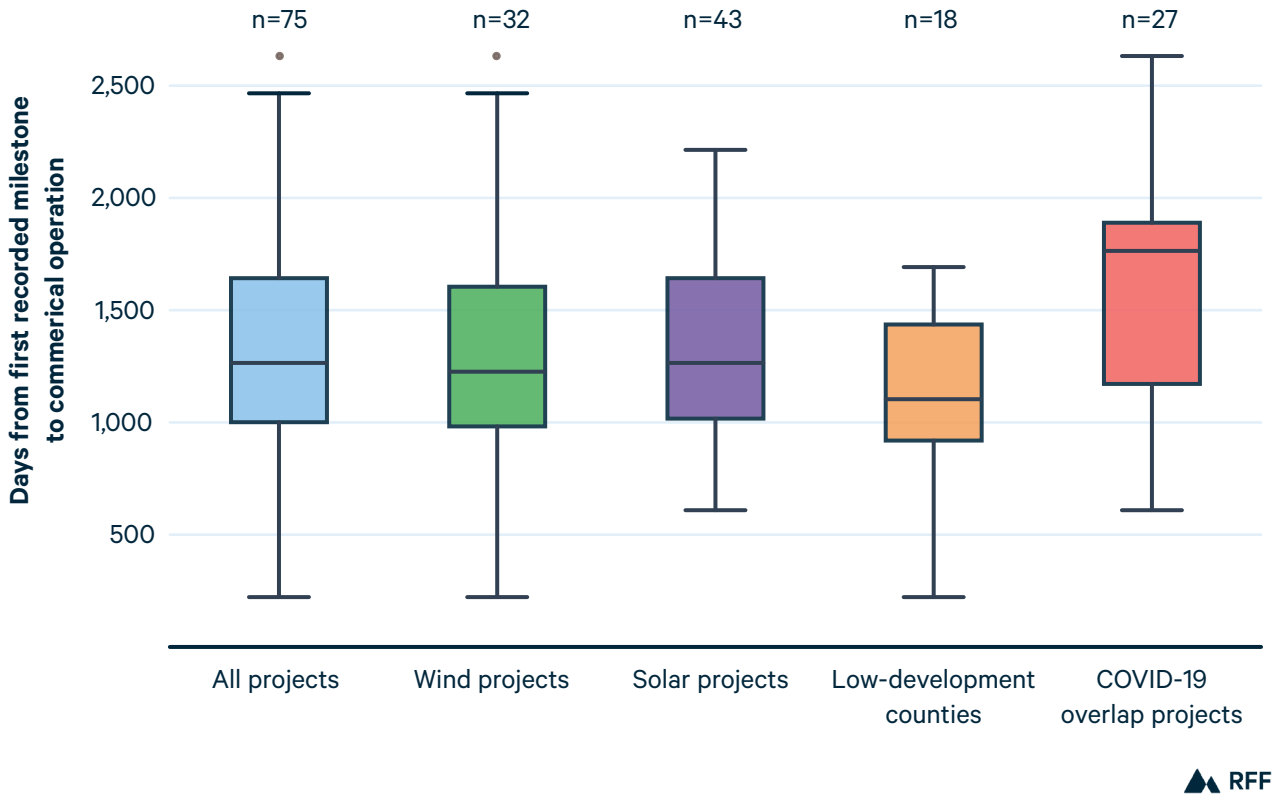


Note: Projects are ordered chronologically by first recorded milestone. Each project is indexed at zero, at construction start. Negative values represent the months before construction, and positive values represent the months after construction has begun. Construction and commercial operation symbols are omitted and are instead represented by the difference in bar color. Dates from vague entries, such as "Early 2024," are approximated for plotting only. PPA = power purchase agreement.

In addition to documenting overall project timelines, we performed a limited exploration of potential drivers for the variability in project outcomes in Texas. First, we investigated projects with planning periods that overlapped with COVID-19 disruptions in 2020 and 2021. Specifically, we evaluated a subsample of projects with a first recorded date before January 1, 2022, and construction beginning after June 2020. Compared with the overall sample, the COVID-19 overlap projects have longer and somewhat more dispersed development timelines (median of ~58 months with a standard deviation of ~18 months) under the definition used. This indicates that the pandemic could have affected development timelines, particularly for projects that were going through the planning and approval process during that period.

In our review of public documents, counties with limited prior renewable energy development experience often appeared to require more public engagement and iteration between developers and local officials, particularly for tax abatements, road use, project boundaries, and community concerns. Public records did not always identify county inexperience as the direct cause of longer timelines, but the meeting materials and approval histories suggest that less experienced counties sometimes

Figure 3. Total Timeline Distribution Across Project Categories



Note: Boxes represent the interquartile range, with the median shown as a horizontal line; whiskers extend to 1.5 times the interquartile range, and points beyond the whiskers represent outliers. One solar farm, Aktina Solar (also known as Ramsey Solar), was excluded for not having a recorded commercial operation date, and consequently the total timeline from first recorded milestone to commercial operation could not be calculated. Low-development counties have a build history of only one renewable energy project. Projects that overlap with COVID-19 have a first recorded date before January 2022 and a construction start date after June 2020. n = number of observations per category.

required more explanation, negotiation, or amendment before projects moved forward. We explored this potential driver of longer timelines by identifying a subsample of 18 counties with only one wind or solar project between 2018 and 2025 using the EIA data set (the yellow box in Figure 3) and found that the 27 projects in these "low development" counties had faster timelines than in the full sample, contradicting our theory about the role of prior development experience. The small sample size warrants caution in interpreting the results but suggests that a county's familiarity with renewable projects is not necessarily the primary driver of timelines in our data. That notwithstanding, it might be that new-to-renewables and low-development counties in our sample were selected by developers because they had limited or no history of project opposition cancellations, therefore resulting in shorter timelines compared with places where opposition was more organized.

The lack of a formal permitting process complicates direct comparison with studies examining other states or jurisdictions. Moreover, other studies often focus on permitting processes rather than overall timelines that include the construction-to-operation phase. If we treat the Texas Chapter 313 process as most comparable to the permitting processes in other states, we find that the time from application submission to approval is relatively short by national standards, averaging roughly 6.5 months for solar projects and 7.5 months for wind projects. That timing is similar to the shortest state-level permitting processes (Kentucky and Mississippi, both approximately seven months) as reviewed by Nilson et al. 2026, and much faster than the overall average in their sample, approximately 12 months across 19 states. It is also slightly faster than the average permitting duration in Massachusetts, which like Texas relies on local permitting approval: 8.2 months (Baillargeon et al. 2026). The total development timeline for wind and solar projects in our Texas sample, measured from the first recorded milestone to commercial operation, averages about 42 months. That is roughly two and a half years faster than the approximately 70-month timeline associated with projects on federal land (Fraas et al. 2025). These comparisons generally support Texas's reputation as a relatively fast state for energy development, especially compared with jurisdictions that require centralized state siting review or federal land approvals. Note, however, that each of the cited studies approaches project identification differently, and projects may vary by size or other characteristics that complicate the comparison.

Those averages mask substantial variability across technologies, counties, and individual projects. Much of the spread occurs before construction begins, when developers are acquiring suitable land sites, negotiating tax agreements, securing offtake agreements, obtaining road access, procuring equipment, and clearing federal or grid-related reviews. In the subset of projects with identified construction-start dates, the period from the first recorded milestone to start of construction was both longer and more variable than the construction period itself. The standard deviation of the preconstruction phase was about 17.5 months, whereas the standard deviation for the construction-to-operation phase was 10 months. This pattern reinforces that Texas's speed advantage is not simply a function of short construction windows but also reflects how smoothly projects move through the less visible preconstruction process. Many of these steps happen through private contracts or fragmented local records, which means the public paper trail is often incomplete.

4. Conclusion

Our findings point to a complex story. Texas has fewer blanket regulations at the state and local levels than many other states, and some projects move quickly. But the project timeline still depends on a web of local tax incentives, private land and power contracts, federal safety reviews, grid coordination, and county road-use agreements. Renewable energy development in Texas, from the first public action to the beginning of operations, can often be fast compared with development on federal land. We observed that 12 percent of all projects had public development timelines of less than two years, and the median development timeline in our sample was roughly 3.5 years, approximately 40 percent faster than on federal lands. Further, when limiting the timeline to just the Chapter 313 process—our best proxy for land-use permitting elsewhere (e.g., state processes, as in Nilson et al. 2026, and local processes in Massachusetts, as in Baillargeon et al. 2026)—we also find quicker speeds in Texas than in many other states. Timelines, however, can vary substantially within and between project types: the standard deviation of full development of wind project timelines is approximately 50 percent higher than that of solar projects.

A significant part of project development in Texas is not publicly discoverable. Our data tracking begins when the developer starts formal conversations with state and local authorities, but the earlier land-lease negotiating phase between developers and local landowners is not publicly disclosed. It was not possible for our team to gauge whether this informal process adds weeks, months, or even years to the average project beyond the publicly observable timeline. Furthermore, our use of the operational projects from EIA 860 data as a starting point precludes us from assessing the likelihood of project cancellations at different points in the development timeline, as well as more recent projects that are not yet operational.

A few final notes. Texas renewable development should not be understood as the absence of formal approval processes. Many approvals are needed. But those approvals are made in a highly local process only partly visible in public records. Therefore, we suggest future analysis go further in matching projects to utility regulators' and grid operators' approvals to better show the timeline for development. Additional work to compare timelines for locally controlled development across states could shed more light on how the overall process in Texas differs from decentralized (i.e., locally led) permitting processes in other states.

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Appendix A. Foard City Wind Farm Case Study

The Foard City Wind Farm is a 350.3-MW onshore wind installation that serves as a case study for the unique nature of Texas energy infrastructure. The project's origins can be traced to the Canada-based clean energy developer Alterra Power Corp, which initiated **land-lease negotiations with private landowners** in Foard County during an extended predevelopment phase. This phase can require one to three years of active groundwork to secure the necessary rangeland. Given the highly individual and trust-building nature of these negotiations, they are rarely, if ever, made part of a project's public record and are **treated as trade secrets by developers**. Because utility-scale wind farms require contiguous tracts of land to minimize wake loss, wind energy developers typically target large private properties to secure initial proprietary land-option agreements. Under the terms of early private deals, Alterra obtained the legal right to erect temporary meteorological testing towers. These towers gathered local, real-time wind speed data over another year to prove to international lenders that the project was financially viable.

Armed with strong wind data and formal contracts, Alterra consolidated its land control over more than 27,000 acres of private rangeland. To signal that the community was legally open to hosting such utility-scale investments, the **Foard County Commissioners Court passed a vital baseline resolution** on November 28, 2016, adopting formal tax abatement guidelines and criteria to establish standardized rules, application fees, and minimum investment thresholds. Because these incentives apply to private land holdings rather than public assets, the county then held public hearings and passed a targeted resolution on August 14, 2017, establishing a specific Chapter 312 reinvestment zone tailor-made to mirror Alterra's leased acreage. With the regulatory runway cleared, Alterra's project subsidiary, Foard City Wind, LLC, formally submitted its raw tax abatement application on October 9, 2017. Following a mandatory 30-day public comment and review window, the commissioners court officially executed the completed Chapter 312 agreement on November 13, 2017, granting the developer a 100 percent abatement on the project's increased taxable value for a 10-year period.

Alterra submitted its Chapter 313 application to the Crowell Independent School District (ISD) on December 11, 2017, **which the ISD acknowledged on December 14** and began processing on February 13, 2018. If, among other criteria, the project proposal passed an independent economic impact evaluation to ensure that it would **generate more tax revenue for the state over 25 years** than the amount of school tax revenue lost from the agreement, the developers would receive a certificate of agreement from the school district before the project proceeded to a final board vote. This **certificate was granted on April 19, 2018**. At the end of a mandatory public hearing at which residents could voice their support or opposition to the project, the project was approved on May 9. **Crowell ISD agreed to cap the wind farm's taxable value at $20 million for 10 years** instead of encompassing the entire projected $384.8 million construction cost, in exchange for which the developer would make supplemental cash payments directly to Crowell ISD.

Three months earlier, on February 6, 2018, **Innergex officially completed a $1.1 billion buyout of Alterra Power Corp**, taking over the development of the Foard City Wind Farm. **Innergex signed a 12-year power purchase agreement** on May 7, 2018, for 300 MW of the project's capacity. This is one of the salient features of Texas energy development: commercial agreements between developers and utilities often evolve alongside, and not after, local government approvals.

Alterra had estimated the 350.3-MW capacity of Foard City Wind Farm using a specific number of turbine locations based on 2017 turbine models. When Innergex took over, it finalized a **procurement contract with GE Renewable Energy** for 139 newer 2.5-MW turbines on August 13, 2018. To lay out these larger turbines, engineers had to obtain an additional 4,449 acres of private rangeland easements, beyond the 27,000 acres negotiated in the Chapter 312 and Chapter 313 tax agreements as the scope of the reinvestment zone. This forced the developer to renegotiate the terms and seek an amendment with the county and school district so that turbines placed beyond the reinvestment zone boundary would not be taxed at total market value.

Like the initial approval negotiations, any changes to the Chapter 312 and Chapter 313 agreements involved a mandatory public hearing. The Foard County Commissioners Court formally met and passed a new local resolution on February 19, 2019, establishing a second, expanded reinvestment zone to absorb the additional acreage for the larger turbines. To keep the overlapping tax incentives aligned, Innergex formally submitted a Chapter 313 amended application to the Texas Comptroller's Office and Crowell ISD on February 27, 2019. After reviewing the geographic modifications, the Texas Comptroller issued an amended certificate of agreement to the Crowell ISD Board of Trustees, **which approved and executed the amended Chapter 313 agreement** on July 29, 2019. This confirmed that despite the expanded footprint, the project still satisfied the net economic benefit test required for the $20 million tax cap.

Federal involvement in the approval of Texas renewable energy projects like Foard City Wind Farm is typically limited. For wind farms, FAA and DOD airspace approvals are the most important. Since the Foard City Wind Farm is not located within 30 miles of active air bases, a DOD siting clearinghouse mitigation agreement was not required, nor did it face national security intervention regarding military aircraft interference.

However, the standard FAA obstruction evaluation process for the Foard City Wind Farm encountered delays that threatened the project's timeline and capital structure. In late 2018, Innergex hit an unexpected regulatory wall while trying to secure its "determination of no hazard" approval from FAA. The 35-day federal government shutdown (from December 2018 to January 2019) completely halted the FAA review pipeline. The backlog **prompted Innergex to publicly warn investors in February 2019** that delays in obtaining the FAA permits could force a reduction in the project's total megawatt capacity or postpone its commercial operation date.

The FAA initial review also flagged potential obstruction concerns with regional airspace users because the siting of the turbines overlapped local civil aviation flight paths. The issue involved largely low-altitude informal traffic, mainly for crop dusting (Foard County is dominated by large-scale agricultural operations). A developer discovers these local conflicts only after individual turbine GPS coordinates have been submitted to FAA and the agency has issued a public notice to regional aviation groups. It was during the public

comment phase of the obstruction evaluation that local agricultural pilots and regional airspace stakeholders formally objected, forcing Innergex to stall construction, shrink the active layout borders, and negotiate a "reduced perimeter" compromise.

Innergex agreed to shift specific turbine clusters to clear an acceptable airspace buffer, satisfying both local pilots and FAA. However, because FAA clears turbines individually or in small batches, rather than approving a 31,000-acre project all at once, Innergex had to advance the project using piecemeal approvals. When Innergex finalized its **$565.9 million construction financing and tax equity commitments** in May 2019, the wind farm still did not have 100 percent of its FAA clearances. At the exact time of financial closing, FAA had formally approved only 94 of the 139 planned turbine locations. **Management had to assure financial lenders that Innergex was "very confident"** the remaining clearances would be processed sequentially over the summer. The final batches of FAA clearances were delivered throughout mid-2019, allowing all 139 turbines to be erected for a fall grid connection.

In all, the expansion of the turbine placement, subsequent renegotiation of the Chapter 312 and Chapter 313 agreements, and the FAA clearance delay pushed back Foard City Wind Farm's initially proposed commercial operation date only slightly, from the third quarter of 2019 to its final realized date in the fourth quarter of 2019. Nevertheless, early-stage construction activities were allowed to commence in April 2019, before the finalization of the state-level tax amendments in June 2019 and certain late-stage FAA individual clearances. This is because in Texas, construction in a reinvestment zone is legally permitted to begin as soon as the school district formally accepts a Chapter 313 application and the Comptroller issues a completeness determination, with the understanding that any capital spent or foundations poured before the final agreement is officially signed are done "at risk" by the developer. If the amendment had been denied, Innergex would have lost the tax cap on those specific sections, but the construction itself was not illegal.

Furthermore, since FAA clears turbines individually, some may be approved for legal construction while others are flagged for relocation. Crucially, the absolute driver for beginning turbine installation in April 2019 despite regulatory friction was the **Federal Production Tax Credit (PTC) timeline**, an emissions-based, technology-neutral scheme that aimed to accelerate clean energy deployment nationwide.[7] Delaying

7 The PTC was an inflation-adjusted tax incentive that gave utility-scale renewable energy facilities a dollar-for-dollar credit against their federal corporate income taxes based on the total kilowatt-hours of clean electricity they generated and sold. To qualify for 100 percent of the federal tax credits, wind projects faced strict statutory deadlines to prove they had begun continuous physical construction and construction components delivery. Between its inception (in 1992) and 2021, Congress allowed the PTC to expire more than half a dozen times. It was repeatedly reauthorized at the last minute (often retroactively), creating a boom-and-bust cycle for wind developers who rushed to build projects before the deadlines hit. The Inflation Reduction Act of 2022 solved this long-term volatility by providing a stable, 10-year extension and transition into new technology-neutral clean energy credits. Its trajectory was abruptly altered by the federal One Big Beautiful Bill in July 2025, which enacted an accelerated repeal and six-year phaseout schedule that terminates the tax credits for wind and solar assets by December 31, 2027.

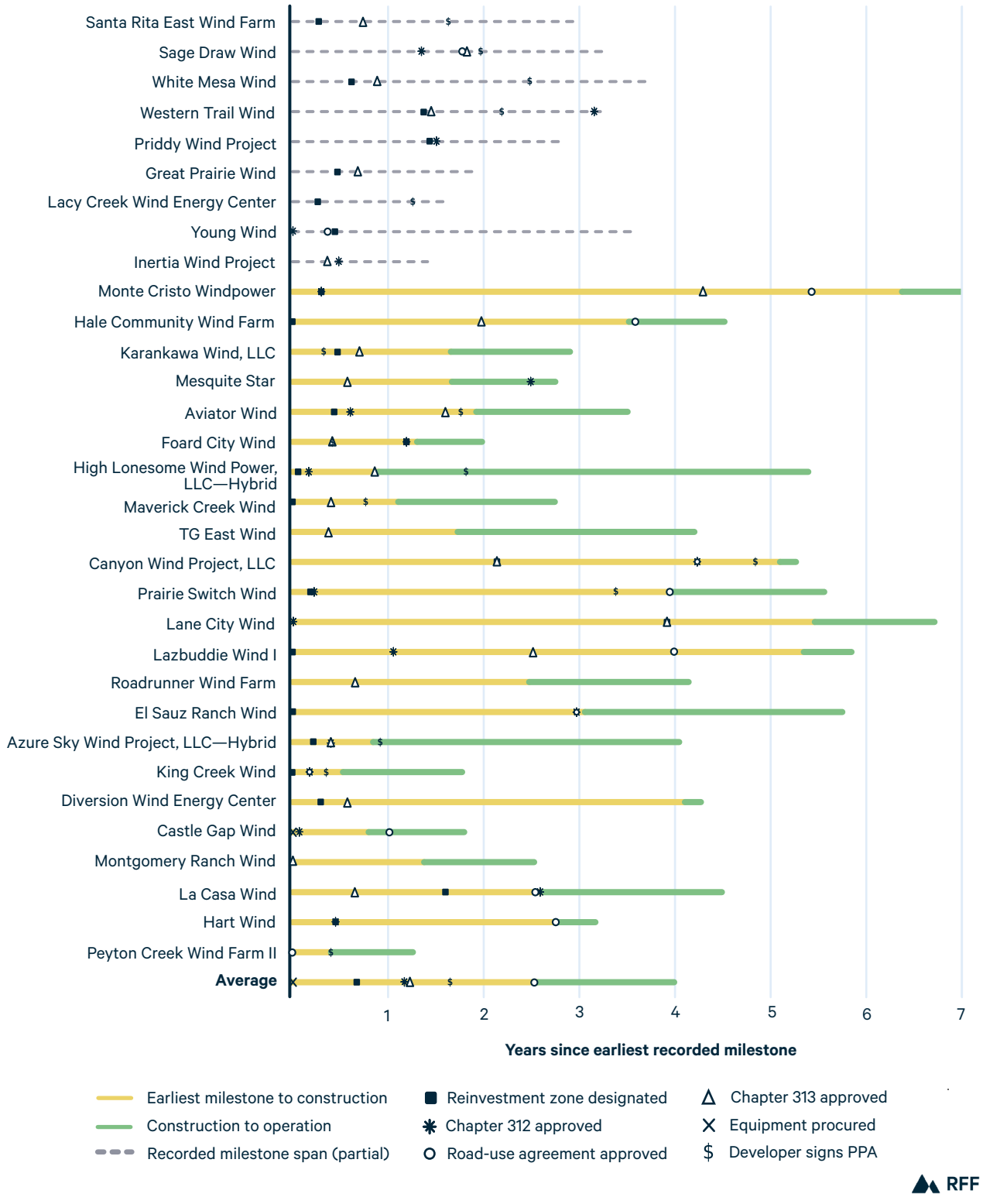
construction until every state-level amendment was signed would have jeopardized millions of dollars in federal tax equity for Innergex.

Two years after the establishment of the Foard County reinvestment zone, **Foard City Wind Farm began commercial operation on September 27, 2019**, following grid synchronization and reactive power capability testing by ERCOT.

Appendix B. Full List of Project Timelines

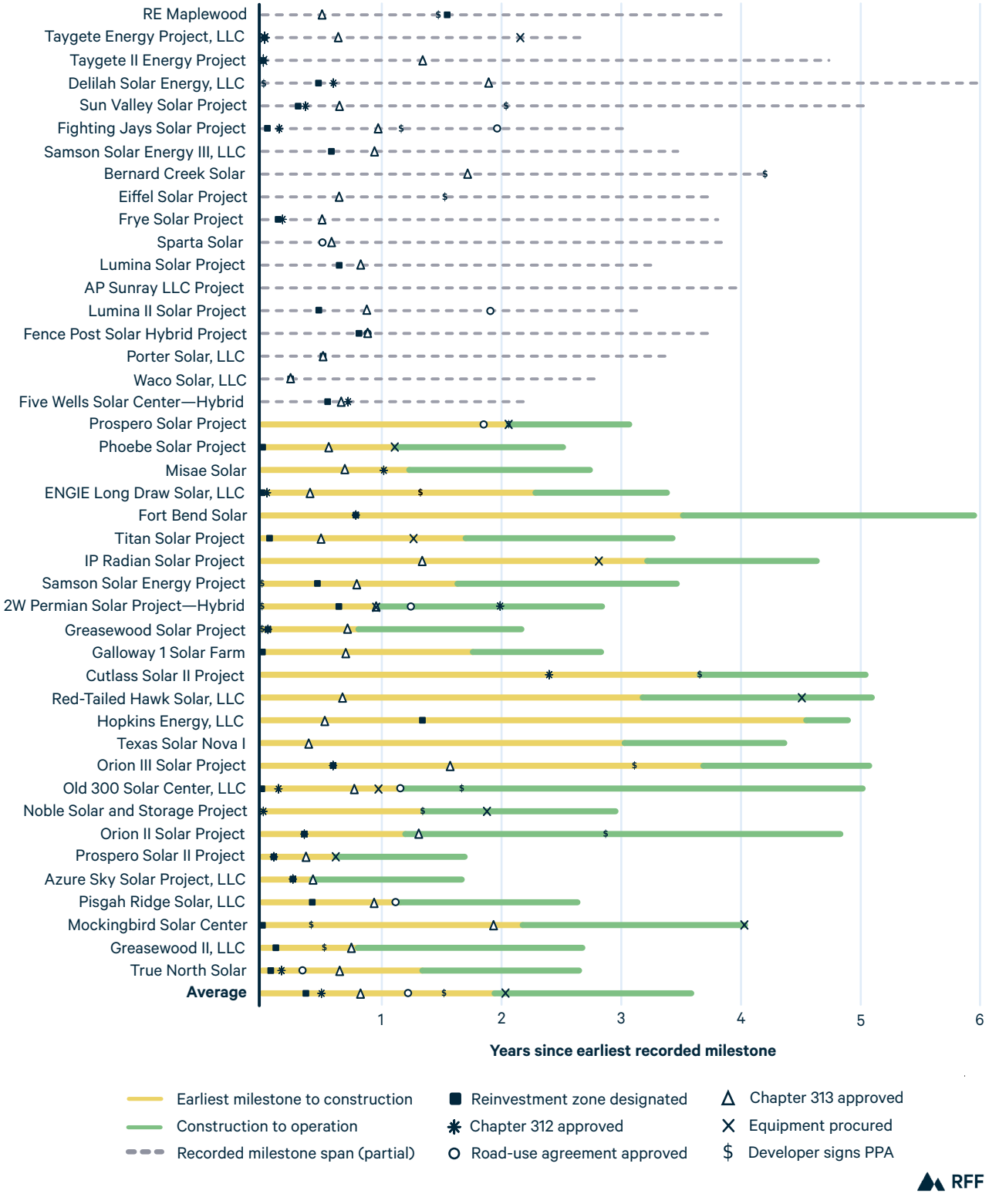
The study's timelines in Figures 1 and 2 were indexed to the start of construction, which leaves out some projects without clear construction dates. Below is a full list of projects (Figure B1 for wind projects and Figure B2 for solar projects) and their associated development timelines, with major milestones. The dashed gray lines indicate projects for which the public record did not contain enough information to identify both the start of construction and commercial operation with the same confidence as the complete observations.

Figure B1. Texas Wind Project Timelines Indexed to Zero Years



Note: Projects are ordered chronologically by first recorded milestone. Construction and commercial operation symbols are omitted because the phases are represented by the bar colors. Unspecific dates are indicated in supplemental project documents and are approximated for plotting only. PPA = Power purchase agreement. Projects are ordered chronologically by first recorded milestone.

Figure B2. Texas Solar Project Timelines Indexed to Zero Years



Note: Construction and commercial operation symbols are omitted because the phases are represented by the bar colors. Unspecific dates are indicated in supplemental project documents and are approximated for plotting only. PPA = Power purchase agreement. Projects are ordered chronologically by first recorded milestone.