FOR IMMEDIATE RELEASE
December 14, 2021

Contact: Allison MacMunn
allison@sunstonestrategies.org
312.622.4004

California's Clean Energy Economy is Booming, But Feeble Pace of Emissions Reductions Jeopardizes Climate Targets

13th annual California Green Innovation Index finds overdependence on natural gas and slowing pace of renewables growth pose major challenges for the state, as path to meeting climate targets narrows

SAN FRANCISCO — California's vibrant clean energy economy is supporting strong job numbers, but failing to deliver more than lackluster annual emissions reductions, as slowing renewable energy growth, underwhelming transportation sector gains, and a worrisome cross-sector overdependence on natural gas pose major challenges for the state. That's the finding of the thirteenth annual ***California Green Innovation Index***—released today by the nonpartisan nonprofit Next 10 and prepared by Beacon Economics.

Total greenhouse gas emissions dropped 1.6% between 2018 and 2019—the second largest percentage decrease since 2010. Yet this achievement falls far short of what is needed to comply with California's mandate to cut emissions 40% below 1990 levels by 2030. California must now sustain a 4.3% annual decrease through 2030—a reduction that is more than 2.5 times greater than was achieved in 2019.

"The *Index* this year shows California making some important gains after emissions increased in 2018—but even the second largest emissions drop in a decade is not enough to overcome challenges related to transportation, over-consumption of natural gas in the power and buildings sectors, and the persistent threat of pollution from wildfires," said F. Noel Perry, businessman and founder of Next 10. "California needs to achieve sustained reductions on a scale we have never come close to. It's really a major test of our climate leadership."

While California's statewide emissions reductions in 2019 failed to keep pace with the dramatic reductions needed, the state did report strong jobs numbers within the clean energy sector—an encouraging sign for the state's economic future. The *Index* found that California's economy has the highest concentration of clean jobs and green jobs in power generation in the nation,

largely due to its investment in solar. California boasted more than 124,000 solar power jobs in 2019—more than one-third of the total number of American jobs in that sector. California's jobs in solar alone were more than five times higher than the number of jobs involved in fossil fuel electricity production in the state.

SLOWING RENEWABLE ENERGY GROWTH, CONTINUED INVESTMENT IN GAS, PAINTS WORRISOME PICTURE FOR STATE'S TRANSITION TO CLEAN ELECTRICITY

The *Index* found that despite meeting California's target of 33% renewable energy by 2020, the overarching trends within the state's power sector—which has historically delivered the bulk of California's emissions reductions—paint a worrisome picture. The pace of California's renewable energy growth has slowed considerably in recent years, and in 2020, the state actually added more gas power capacity (1.5 gigawatts) than any other power source, including solar (1.3 gigawatts). Electricity generation from wind, solar, geothermal, biomass and hydroelectric made up 45.3% of the state's power mix in 2020—a slight decrease from 46.3% in 2019.

"To meet California's goal of 50% renewable energy by 2026, the state's share of electricity generation from renewables would need to increase by 2.8% annually," noted Patrick Adler, Research Manager at Beacon Economics. "But the percentage of California's total power mix from renewable energy resources crept upward by just 1.4% in 2020—driven largely by the retirement of older and less efficient fossil fuel power plants, as opposed to the addition of new renewable energy resources. So, there's a lot of work to be done."

HEAVY-DUTY TRUCK EMISSIONS REDUCTIONS A BRIGHT SPOT AMIDST MEAGER TRANSPORTATION SECTOR GAINS

The *Index* found that transportation sector emissions, California's largest source of greenhouse gas emissions, ticked downward just slightly in 2019, dropping 2.1% from 2018 to 2019, and remaining at just over 40% of the state's total emissions (40.9% in 2018; 40.7% in 2019). This decrease was driven largely by a substantial 7.5% drop in heavy-duty vehicle emissions—and aided by a small (1.5%) drop in light-duty truck and SUV emissions. This is the second year in a row that both truck categories have seen emissions drops.

The *Index* also found that while the total number of zero-emissions vehicles (ZEVs) registered in California is growing, the state's gradual adoption rate is not keeping pace with what is needed to meet California's target of 1.5 million ZEVs on the road by 2025. In 2020, the number of ZEVs on California roads increased 11.6% compared to 2019. To meet California's 2025 target, the

number of ZEVs registered will need to increase 18% annually—revised upwards from the previous 16.9%—amidst falling pandemic ZEV sales.

Major policy developments over the past two years, however, could lay the groundwork for a rapid acceleration in the transition to zero-emissions vehicles. In 2020, Governor Newsom issued an executive order setting a target of 100% zero-emissions car sales by 2035, and in June 2020, the California Air Resources Board approved the Advanced Clean Trucks rule, which gradually ramps up a sales requirement for electric trucks.

"California is poised for a real turning point in the transition to zero-emissions vehicles, but we haven't gotten there yet, and time is running out to meet our transportation sector targets," said Perry. "State leaders have laid the right policy foundation for a clean transportation future, but we urgently need to help accelerate the adoption of zero-emissions vehicles in the immediate future."

Despite slow electric vehicle growth statewide, the *Index* did reveal some promising signs that clean vehicle adoption is expanding outside of its traditional market hold in urban areas. The report found that while the share of ZEVs on-road as a percentage of total vehicles registered in urban areas increased at a mostly similar pace in 2020 compared to 2019, areas outside of metropolitan regions recorded a faster pace of increase. The report also found that the share of people living in disadvantaged communities who have participated in one of California's key clean transportation incentive programs—the Clean Vehicle Rebate Program (CVRP)—has increased steadily over the last few years. In 2020, more than 26.3% of CVRP rebates came from disadvantaged communities, up from 17.8% in 2015—a sign that California's efforts to more equitably distribute electric vehicle incentives are starting to show results.

Key transportation-sector findings include:

- Greenhouse gas emissions dropped 1.9% from on-road vehicles (passenger cars, buses, light-duty trucks, heavy-duty trucks) in 2019.
- The amount of transportation fuel consumed in 2019 was similar to 2016—but thanks to increases in fuel economy, as well as an increase in zero-emissions vehicles, greenhouse gas emissions per unit of fuel consumed were 2.4% lower in 2019 compared to 2016.
- After years of increases, the total number of vehicles registered and vehicle miles traveled (VMT) in California dropped by 1.8% and 2.3% respectively from 2018 to 2019.
- In 2020, battery electric, plug-in hybrid, and hydrogen vehicles accounted for 2.2% of all registered on-road vehicles in California—up from 1.9% in 2019 and 1.5% in 2018.

- In 2020, the vehicle ownership rate dropped to 74.7 per 100 persons, down from 79.4 in 2019—a decline that was likely pandemic-induced, and that could reverse itself as the economy recovers, and as supply chain issues are resolved.

GAS USE IN HOMES AND BUILDINGS CONTINUES TO GROW, DESPITE NEED TO TRANSITION HOMES TO ELECTRICITY FOR HEATING TO MEET CLIMATE TARGETS

The consumption of natural gas in homes and buildings in California is on the rise—up 15.3% in the commercial sector since 2014, 17.8% in residential homes since 2014 and up 19.8% in the industrial sector since 2009. This spike in gas use is especially concerning given that California will need to transition homes and buildings off of gas entirely to meet its climate targets, through a shift to electric appliances for heating and cooking.

Since 2019, California has led the nation with a series of state and local policies aimed at cutting gas use in new construction—a key step in the state's plan towards decarbonizing its building stock. Tackling gas use in new homes and buildings, however, is only the first step in addressing emissions from gas—cutting gas use in existing buildings will be much more challenging.

"Our Index shows that natural gas is quickly becoming California's Achilles' heel across sectors. Gas use is on the rise in buildings, even as our state leads the nation with policies to phase it out in new construction. In the power sector, we added more new gas generation than any other resource in 2020," said Adler. "To meet our climate targets, we need to reverse these trends, and quickly."

STRONG CLEAN ENERGY JOBS NUMBERS GOOD NEWS FOR STATE'S ECONOMIC RECOVERY

Prior to the COVID-19 pandemic, the *Index* found that the state of California had the highest concentration of clean jobs and green jobs in the nation. While California's nation-leading investment in solar paid the greatest job dividends for the state (124,817 solar power jobs), the state also boasted significant specialization within energy storage (18,571 transmission, distribution and storage jobs) and a smaller, but still significant specialization in hydroelectric power production (11,091 jobs). California ranked 2nd in the nation for solar specialization per capita and 5th in the nation for transmission, distribution and energy storage specialization.

Unlike the state's booming solar industry, California's wind workforce still remains relatively small (6,273 jobs) but that could be set to change in coming years. Earlier this year, the state passed legislation putting California on a path to offshore wind development—a clean energy

investment that could create thousands of new jobs, in addition to providing urgently-needed grid resiliency benefits.

"Our data show that California's clean energy investments have paid incredible job dividends for our state. These findings are especially important given that our state could see a massive influx of clean energy investments from the federal government this coming year," said Adler. "In addition to supporting California in meeting our climate targets, these funds could also create impressive job growth, especially in less-developed areas of the state."

The *Index* found that the cities of Stockton, Riverside, Vallejo and Yuba City were actually some of the best positioned in the state for rapid job growth in green industries, due to the skillset of their workforce, including many in the trades. Workers in these areas are more likely to possess the physical skills demanded by many green jobs, including control precision and multi-limb coordination. The challenge for the state of California is now to encourage the growth of green industry anchors like wind farms, storage systems, and zero-emissions vehicle manufacturers, in these communities. Doing so will to open up new job pathways, distributing the economic dividends of the clean energy transition to more Californians.

Key findings include:

- In comparison to renewable power sources, California's fossil-fuel portfolio provides a much smaller source of jobs. Only 22,901 jobs were involved in fossil fuel (including coal, natural gas, and oil) power production in 2019. The state's solar power jobs alone exceed 124,000.
- In the past five years, clean energy jobs have grown 12.4% in California–substantial gains for a state that is already a national leader.
- The Biden administration this year identified two project sites in California for offshore wind development that could provide up to 4.6G W by 2030. Development of just one of the sites that California has identified for offshore wind development–Morro Bay—is projected to bring 617 permanent jobs to San Luis Obispo County and 481 to the rest of the state. The construction of that project is expected to create $3.7 billion in economic value for the state, the equivalent of 11,368 jobs, according to an analysis by the REACH lab at California Polytechnic University.

WILDFIRE EMISSIONS CLIMB, ELEVATING RISK OF RUNAWAY CLIMATE CHANGE

The *Index* found that emissions stemming from wildfires reached the highest level since the state began tracking them—totaling more than 106 $MMTCO_2e$, more than any other sector aside from transportation. While some of these carbon emissions will be reabsorbed as

California's fire-ravaged forests recover, the scale of the emissions is worrying nonetheless—especially given that wildfires are likely to continue to grow in size and severity as temperatures rise with climate change.

“The wildfires California is dealing with today are simply an order of magnitude larger than what we’ve faced in the past, and their emissions impact can no longer be ignored. These fires represent both a cause and a symptom of climate change that all Californians must now deal with. While addressing the state’s wildfire crisis may seem just as difficult and insurmountable as our other economy-wide emissions challenges, it is critical that we do all we can to ramp down emissions across all sectors so that future generations of Californians can thrive,” said Perry.

###

About Next 10

Next 10 is an independent, nonpartisan, nonprofit organization that educates, engages and empowers Californians to improve the state’s future. With a focus on the intersection of the economy, the environment, and quality of life, Next 10 employs research from leading experts on complex state issues and creates a portfolio of nonpartisan educational materials to foster a deeper understanding of the critical issues affecting our state.

About Beacon Economics

Founded in 2007, Beacon Economics, an LLC and certified Small Business Enterprise with the state of California, is an independent research and consulting firm dedicated to delivering accurate, insightful, and objective economic analysis. Leveraging unique proprietary models, vast databases, and sophisticated data processing, the company’s specialized practice areas include sustainable growth and development, real estate market analysis, economic forecasting, industry analysis, economic policy analysis, and economic impact studies.