

How can San Diego reach its climate goals? New plan lays out the options — and trade-offs

By Deborah Sullivan Brennan

SAN DIEGO — An updated plan for slashing carbon emissions in San Diego County adds new options that could include installing much more rooftop and urban solar, buying power from the Imperial Valley and building new energy facilities on toxic “brownfields.”

The report, released Wednesday, is part of the county’s decarbonization framework, a roadmap to achieving net carbon zero, the point at which carbon removed from the atmosphere equals the amount of carbon emitted.

It offers a deep dive into the environmental and economic trade-offs required to build a lot more renewable energy fast, and it explores the balancing act local leaders must perform as they make over the way San Diego powers its homes, roads and businesses.

The report was issued as local and federal leaders line up behind aggressive climate response. Last week, the city of San Diego adopted a new, ambitious climate action plan, and Congress has given final approval to a landmark climate action package through the Inflation Reduction Act.

The stakes are clear, as California faces deadly wildfires, extreme heat scorches Europe and a study released Thursday shows that the Arctic is warming four times faster than the rest of the planet.

“I think this is an exciting time, because there’s clearly political will across jurisdictions in the region, and with the city’s new (Climate Action Plan) there’s certainly an effervescence of action now, which is fantastic,” said Gordon McCord, an author of the county report and professor at UC San Diego’s School of Global Policy and Strategy. “We just need to be systematic and work backward from our (carbon reduction goal) to figure out how much we need to do every year so that we’re on track to get to zero.”

To reach carbon zero, officials must deploy technical resources throughout the region and work closely with businesses, universities and other local governments, said Murtaza Baxamusa, program manager for regional sustainability with the county. If done right, he said, it could boost the region’s economy.

“We’re talking about tapping into the ingenuity and the creative culture and the strengths that our region possesses,” he said.

The technical report is a new version of a document released last summer, updated after feedback from county supervisors and the public. It looks at ways to remove carbon emissions from

five sectors: energy, buildings, transportation, land use and natural resources, and food systems and recycling.

Land-use changes that add roads and developments may increase carbon emissions, but natural systems such as wetlands, forests and chaparral can capture carbon and store it in plants and soil.

Similarly, some ranching practices and fertilizer applications release carbon, while agricultural methods known as carbon farming trap carbon in soil to sequester greenhouse gases. That will be a consideration for San Diego's \$2 billion agricultural economy.

Reaching net zero in transportation and buildings will depend on switching to zero-emission cars and trucks in place of gas or diesel vehicles, and installing heating and cooling systems powered by electricity instead of natural gas.

The success of those efforts will depend in turn on rapid expansion of renewable energy sources such as wind and solar.

The report makes clear that there are multiple ways to scale up those power sources, with different costs and benefits.

The cheapest route would be to build utility-scale solar and wind farms in East County, or combine those with geothermal energy from Imperial Valley.

Solar and wind farms would cover hundreds of square miles, however, and could disturb sensitive ecosystems, valuable farmland and neighboring communities.

"There's trade-offs, because that is maybe a biodiverse area, or has agriculture, or is visible from somebody's backyard," McCord said. "How do you trade that off against the other uses of land that society cares about?"

He and the report's other authors explored scenarios that would exclude land with high conservation value, high agricultural value and high potential as natural carbon sinks, or would use only land already flagged for development. They also considered a scenario relying solely on rooftop and urban infill solar — smaller solar arrays on undeveloped parcels.

The drawback to most of those routes is that they wouldn't generate enough power to get the county to its carbon zero goals.

So the authors considered combinations of energy sources that could avoid some environmental impacts while meeting energy demand. A mixed scenario would integrate some large-scale renewable energy facilities with expanded rooftop solar, and purchase more power from Imperial County's solar, wind or geothermal projects.

A similar option proposes maximizing rooftop and infill solar first, then filling in the rest of the energy demand with large renewable energy projects, "being as deferential as we can to agricultural

and conservation land," McCord said.

Rooftop solar programs can also provide the improvements to dense, lower income areas that traditionally haven't had access to them, he said. "That can create jobs, reduce local air pollution for communities, add new power production facilities and prevent these communities from being the last to use fossil fuels at higher costs," he said.

The new report also considered the option to build solar on "brownfield" sites contaminated by hazardous substances or pollutants, which could reduce the need to develop such facilities on more valuable land. And it added maps and data on the batteries and other systems needed to store energy when the sun and wind aren't producing it.

McCord said the plan relies on energy technology that's already on the market, but should be flexible enough to take advantage of potential future developments, such as offshore wind projects or wave energy.

The board of supervisors is scheduled to consider the updated report on Aug. 31. Final approval, originally slated for this month, has been delayed until spring, Baxamusa said, when planners will present a detailed implementation plan to spell out exactly how the county can cut emissions in coming decades.