Closing the GHG Emissions Gap

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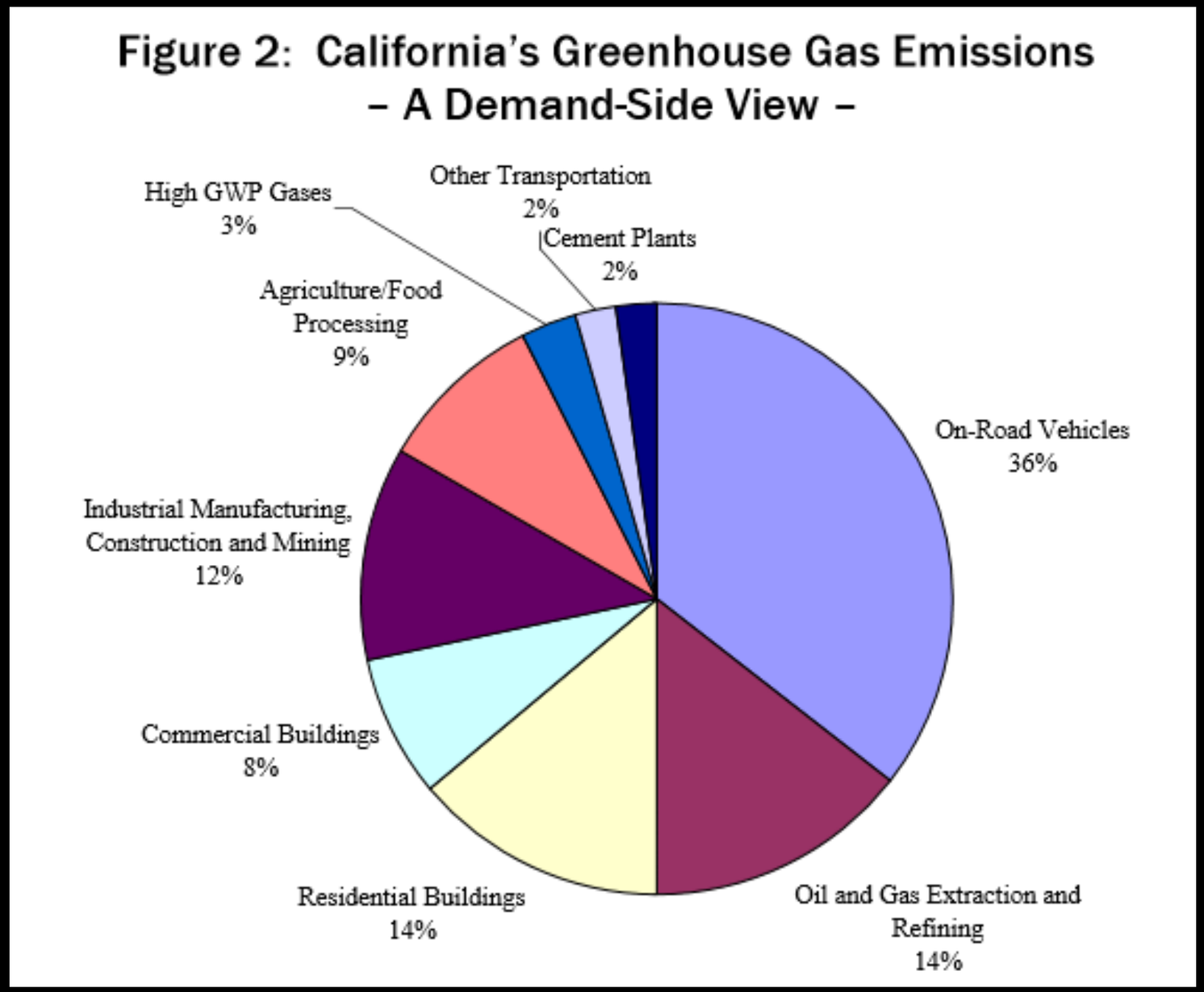
Outline

- Overview of AB 32 Scoping Plan and Update
- Overview of the opportunities for GHG reductions in agriculture
  - Water and energy
  - SGMA implementation
- Climate-water disconnects
- Questions

AB 32 Scoping Plan



2014 Update

- Original scoping plan had only recommended action for agriculture: “methane capture at large dairies”
- 2014 update had nearly 10 recommended actions

Potential areas for reductions/sequestration

- Nitrogen management
- Manure management
- Soil management practices
- Farmland protection
- Highly efficient conventional and organic agriculture systems
- Water and fuel use

Reducing methane emissions and water use

California Environmental Protection Agency
Air Resources Board

NEWS RELEASE

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Air Resources Board approves rice cultivation carbon offset protocol, expands forestry offset protocol

Rice protocol offers agriculture another opportunity to benefit from cap-and-trade, reduce greenhouse gases

SACRAMENTO - The Air Resources Board today approved a new carbon offset protocol that will allow rice farmers to receive credit for using best practices for rice cultivation. The Rice Offset Protocol joins five other offset protocols developed under California's cap-and-trade program.

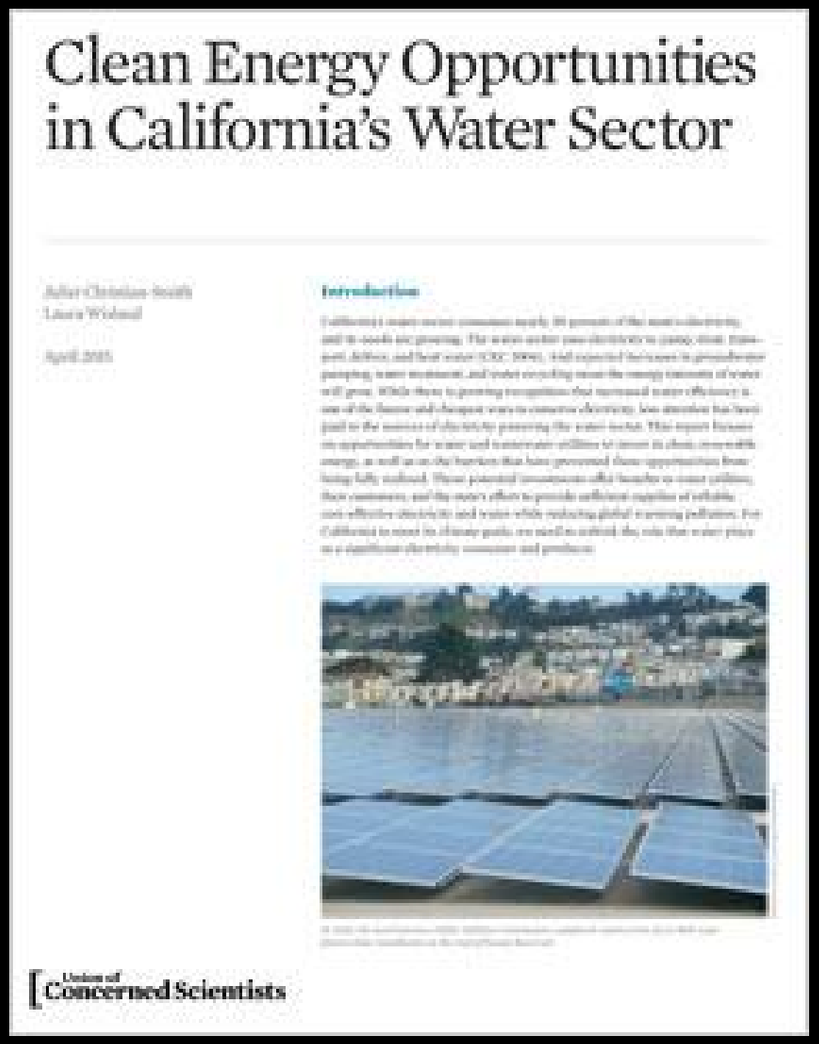
"This protocol provides rice growers an opportunity to do something good for the environment as well as save water, and benefit financially from those efforts," said Air Resources Board Chairman Mary D. Nichols. "The protocol is designed to be used not only in California but all rice-growing states, sharing the benefits with growers there while providing another cost-effective way for companies in the program to comply with cap-and-trade."

Carbon offsets come from greenhouse gas emission reductions in sectors that are not regulated by the cap-and-trade program.

Under the protocol, growers who use approved methods for dry seeding, drainage practices, and handling rice straw receive credits based on avoided emissions of methane. The Cap-and-Trade Program evaluates methane as being 21 times more potent than carbon dioxide for trapping heat in the atmosphere.

Each credit a grower receives is the equivalent of a metric ton of carbon dioxide. The grower can sell those credits to companies regulated by the cap-and-trade program.

Water and energy


Clean Energy Opportunities in California's Water Sector

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Introduction

Union of Concerned Scientists

- GHG emissions related to water use is likely to significantly increase in the years ahead because of expected increases in groundwater pumping, water treatment, and water recycling.

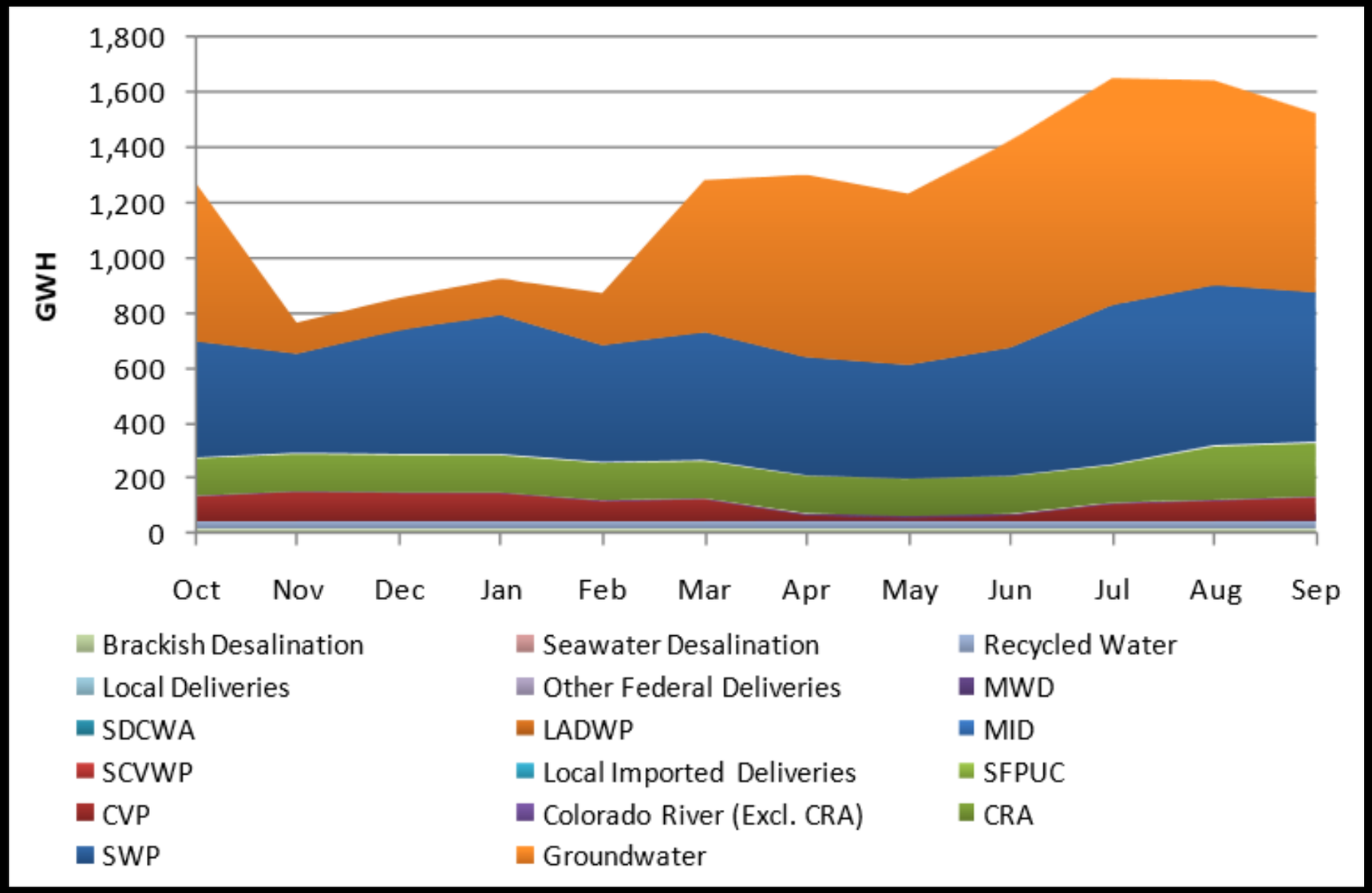
Part of the solution

- Conversely, water users are poised to become a greater part of the energy and climate solution because many own assets and infrastructure that can host renewable energy facilities or provide flexibility to the grid.
- Recently, a demand response aggregator signed a 10-year contract with PacifiCorp to deliver approximately 185 MW of electric reduction capability from the agriculture sector in Idaho and Utah, with the potential to expand into additional states in the future.

Some conclusions

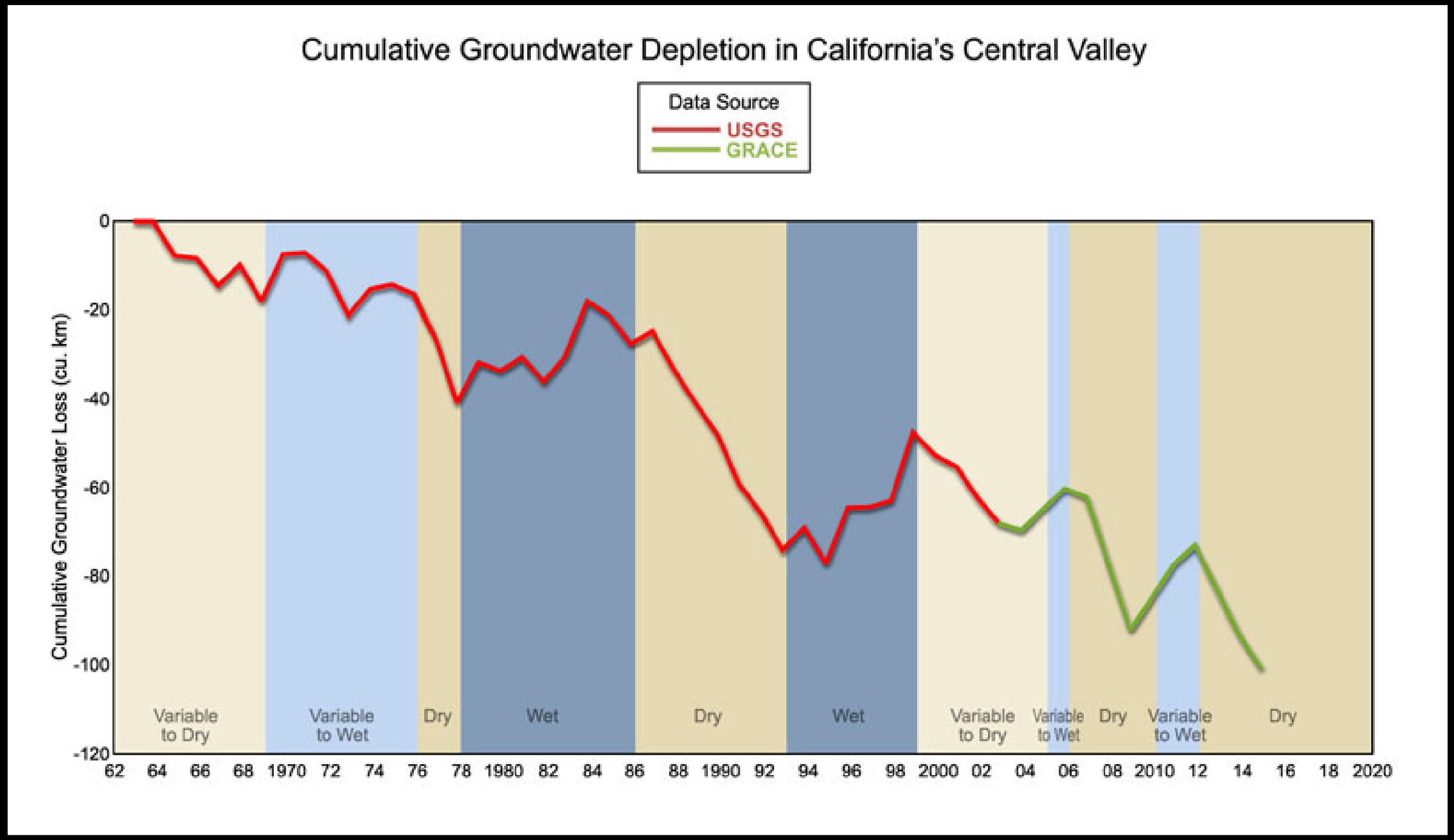
- Better data are needed to understand where opportunities lie for the water sector to best contribute to California’s climate goals.
- As data become available, water users may be able to access new revenue sources including GGRF (SB 471), sales of renewable energy credits, or payments for providing grid services.

Groundwater pumping



CPUC 2010. Embedded Energy in Water Studies, Study 1: Statewide and Regional Water-Energy Relationship

Groundwater and climate change



SGMA

- New institutions (GSAs)
- New plans (GSPs)
- New players
- And last, but certainly not least, new consequences

Timeline

2017

- Requires the formation of local groundwater sustainability agencies (GSA)

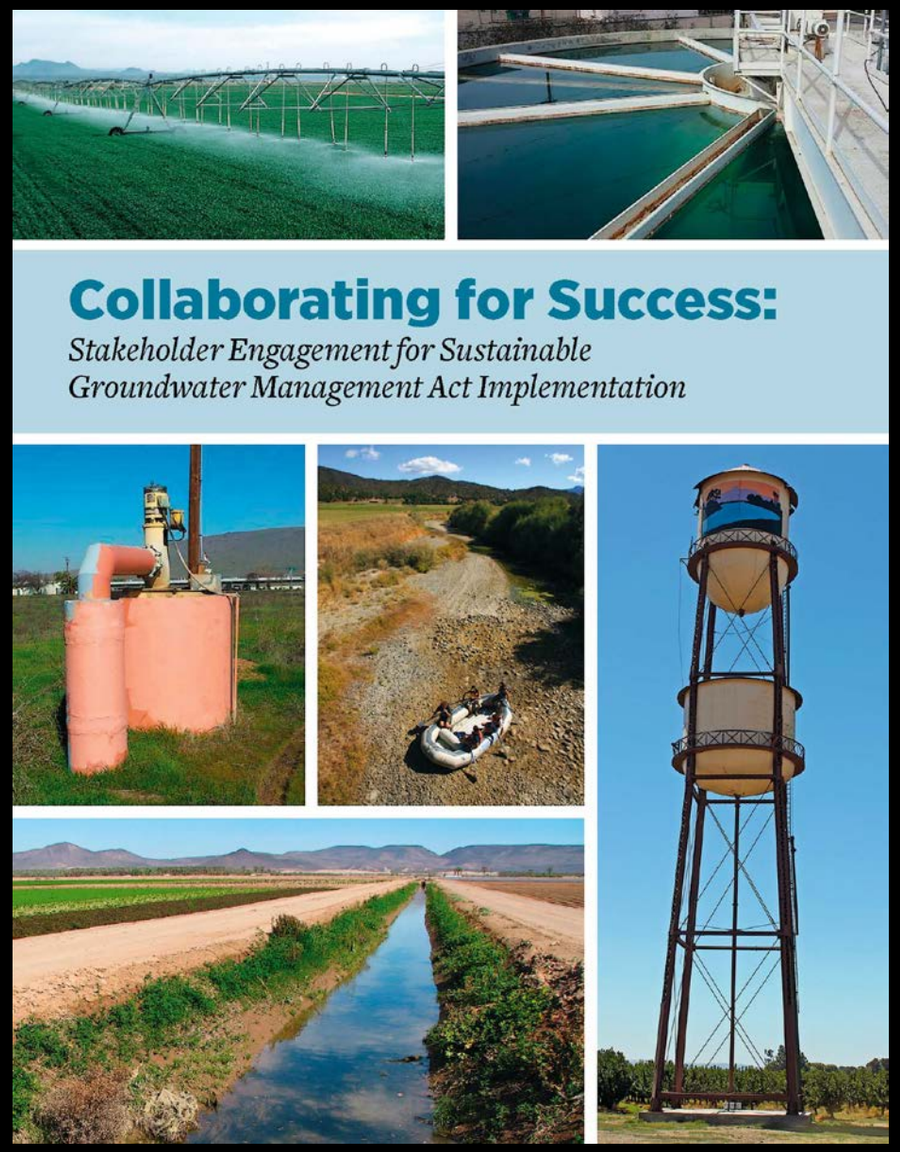
2020

- GSAs must create and adopt a groundwater sustainability plan (GSP)

2040

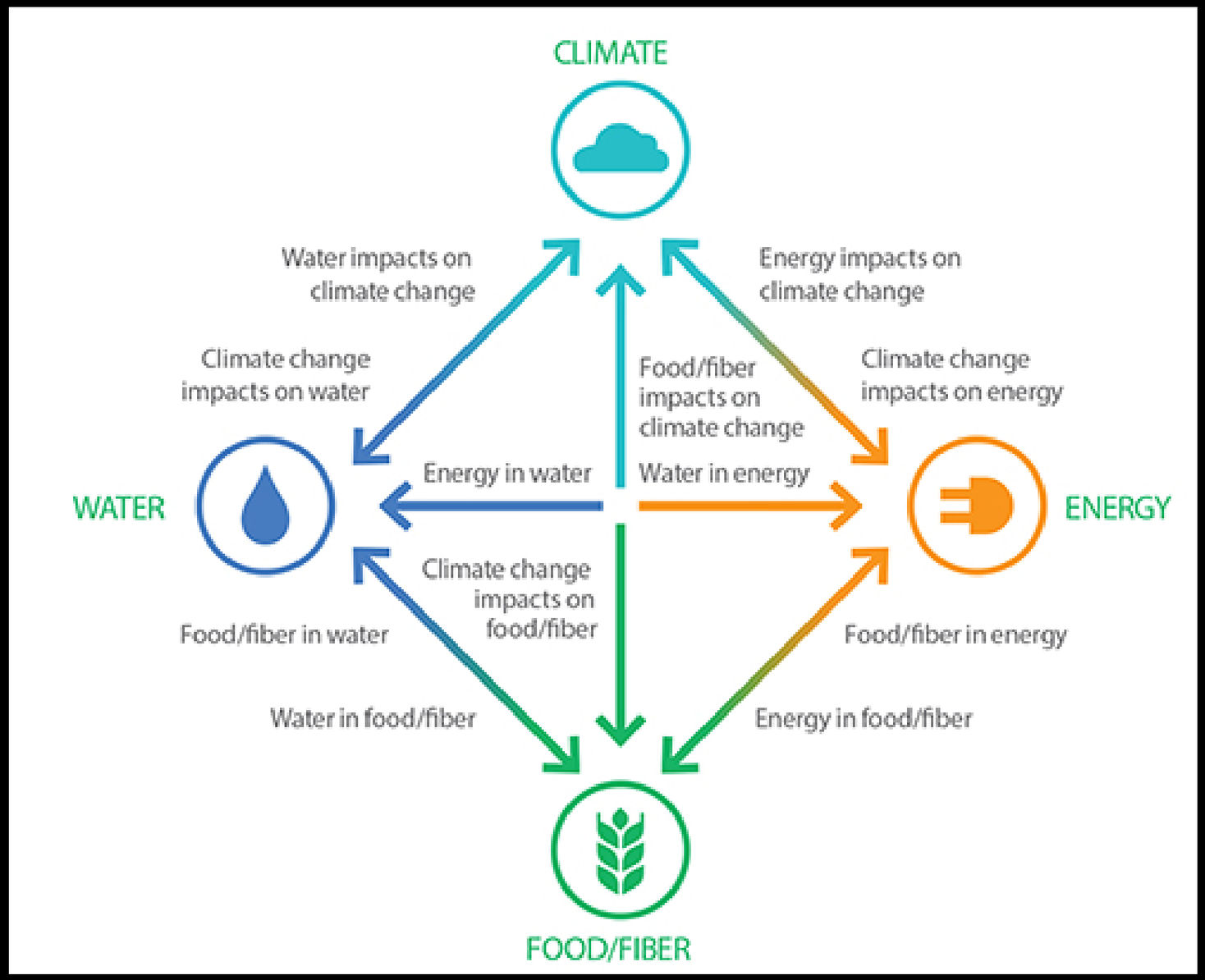
- GSAs have 20 years to fully implement their GSP and achieve the “sustainability goal”

New players and plans



- The GSA shall consider the interests of all beneficial uses and users of groundwater and shall coordinate with local land use planning entities and General Plans
- GSAs must consider a 50 year timeline for planning

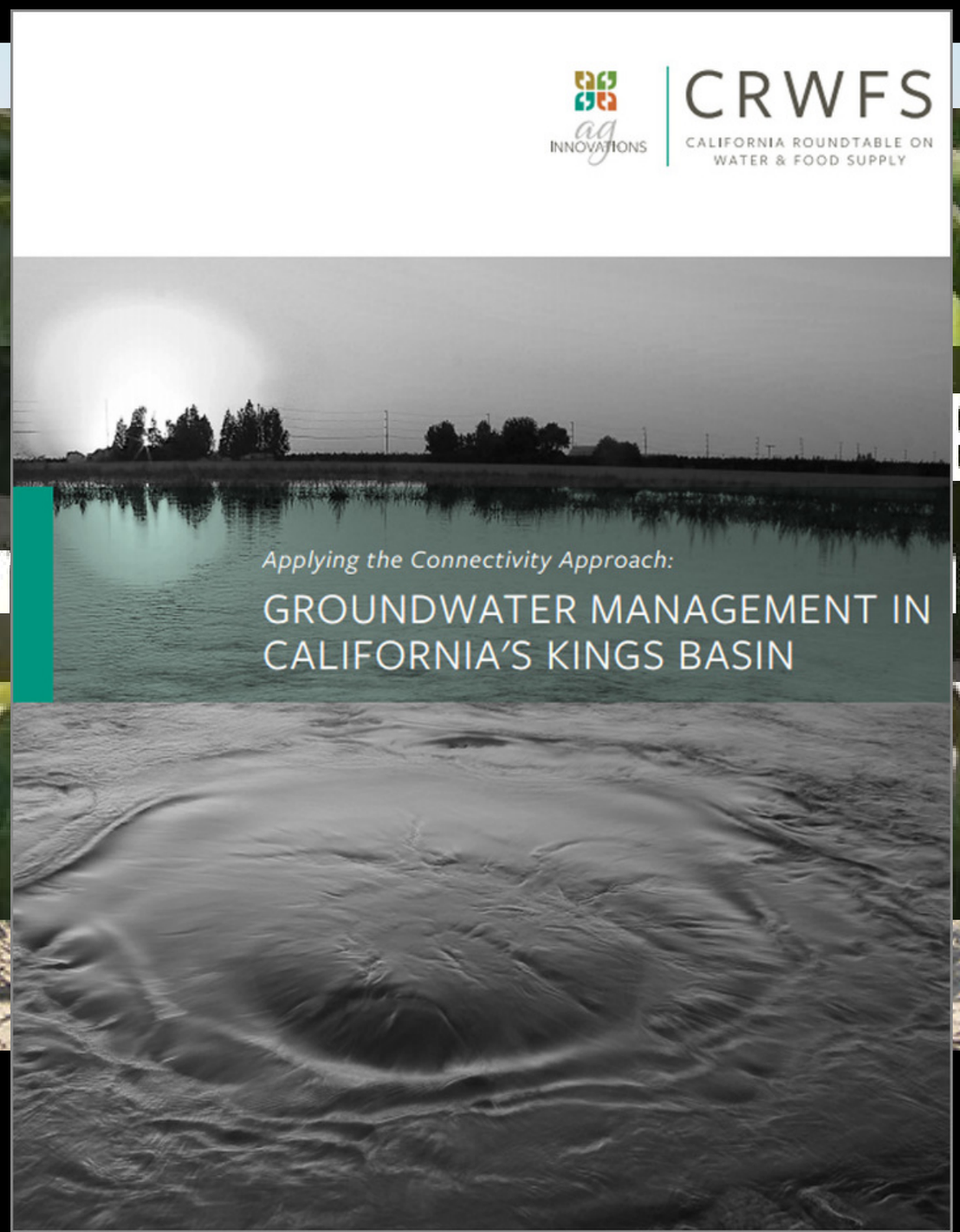
Climate-water-food-energy nexus



Climate-water disconnects

Note: Circles are used to indicate approximate locations and extents of inundation. Circle sizes do not correspond to intensity, timing, or risk of inundation.

Making the critical connections



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Summary

- There are a variety of ways that the agricultural sector can contribute to California’s climate goals
- Among the most promising: water management, which coincides with the goals of SGMA
- More integrated thinking and planning needed to take advantage of the opportunities created by the climate-water-food-energy nexus

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