# Climate Change Action in Arizona

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## I.
## BACKGROUND

> In the absence of meaningful federal action, it has been up to the states to show leadership on this critical issue. And that is exactly what we have done.
>
> Governor Janet Napolitano[1]

Arizona is one of the newest and fastest growing states in the country. Over the last twenty years, Arizona's population has

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1. Testimony of Governor Janet Napolitano, U.S. House Select Committee on Energy Independence & Global Warming (Nov. 14, 2007).

nearly doubled.[2] During that same time, greenhouse gas (GHG) emissions in Arizona have skyrocketed, due substantially to the state's population growth.

An inventory and forecast of Arizona's GHG emissions prepared in 2005 for the Arizona Climate Change Advisory Group (CCAG) at the direction of then-Governor Janet Napolitano found that, between 1990 and 2005, Arizona's net GHG emissions increased by nearly 56 percent, from an estimated 59.3 million metric tons carbon dioxide equivalent (MMtCO2e) to an estimated 92.6 MMtCO2e.[3] Two sectors directly related to Arizona's rapid population growth—transportation and electricity—accounted for nearly 80 percent of Arizona's total GHG emissions in 2005.[4] Both sectors are growing at relatively high rates as Arizona's population grows.

Indeed, with Arizona's population expected to continue to grow at a vigorous pace in the decades ahead,[5] the 2005 inventory and forecast projected that Arizona's GHG emissions would increase 148 percent over 1990 levels by 2020 if steps are not taken to reduce the emissions.[6]

Because of Arizona's reliance on gasoline-fueled automobiles and demand for electricity produced by coal-fired power plants, Arizona's GHG emissions increased at a rate more than twice the national average during 1990-2005.[7] Further, Arizona's projected 148 percent growth-rate between 1990 and 2020 is more than three times the projected national average over the same

2. According to the U.S. Census Bureau, Arizona's population was 3.6 million in 1990 and 6.3 million in 2007. *See* U.S. Census Bureau, State & County Quickfacts, *available at* http://quickfacts.census.gov/qfd/states/04000.html.

3. *See generally* CLIMATE CHANGE ADVISORY GROUP, ARIZONA CLIMATE CHANGE ACTION PLAN, Ch. 3 (Aug. 2006), *available at* http://www.azclimatechange.us/ewebeditpro/items/O40F9347.pdf [hereinafter CCAG]. Arizona's GHG emissions in 2000 were an estimated 82.3 MMtCO2e, a 40% increase over 1990 levels. *Id.* at 30.

4. *Id.* at 32-38.

5. Arizona is projected to have a 2011 population of 7,186,070. By 2020, the state's population is expected to grow to 8.8 million; 11.7 million by 2040. *See* Ariz. Dep't of Econ. Sec., "Arizona Population Projections 2006-2055" (Mar. 2006).

6. The projected 148 percent increase in emissions took into account the expected effects of recent energy efficiency actions adopted by the State. Without such actions emissions likely would increase 159% over 1990 levels by 2020. CCAG, *supra* note 3, at 4 n.2.

7. Emission growth was 56% for Arizona vs. 22% for the nation as a whole. *Id.* at 3, 30.

period.[8] Arizona's forecasted GHG increase is the highest known projected emissions growth rate in the country.[9]

On the other hand, because of Arizona's mild winters and relative absence of manufacturing and heavy industry, the state's per capita GHG emissions (the total level of statewide emissions divided by state population) is significantly less than the national average: 14 MtCO2e versus 22 MtCO2e.[10] Moreover, while the percentage of GHG emissions from electricity production in Arizona is greater than the national average, Arizona gets slightly less electricity from coal and more from low-GHG-emitting sources, such as nuclear power, hydroelectric power and renewable energy (such as solar and biomass).[11]

While Arizona's high emissions growth rate presents challenges, it also provides major opportunities. Because nearly 80 percent of Arizona's GHG emissions are directly related to energy and transportation, Arizona can significantly reduce its GHG emissions by focusing on those sectors. Improved energy efficiency, increased use of renewable energy sources, building new infrastructure "right," and increased use of cleaner transportation modes, technologies and fuels are key elements in accomplishing these reductions. They are also all essential ingredients of a new, greener economy toward which the state must move in any event.[12]

## II.
## CLIMATE CHANGE IMPACTS IN ARIZONA

It is critical that Arizona take action to reduce its GHG emissions because the scientific evidence is clear that Arizona and the Southwest will be especially hard-hit by the impacts of climate change in the future. Indeed, as Governor Napolitano stated in testimony before the U.S. House Select Committee on Energy

8. *Id.* at 4.
9. *Id.*
10. *Id.* at 4, 30.
11. *Id.* at 32.
12. The electricity emissions estimates cited herein are based on a "consumption-based" approach to emissions accounting. This means that the estimates reflect the GHG emissions associated with the electricity sources used to meet the demands of Arizona consumers. Arizona's GHG emissions from electricity production actually occur because Arizona produces more electricity than is consumed in the state. For example, Arizona produced 23% more electricity than it used in 2000, with the excess exported to other states. Emissions associated with electricity production in 2000 were 44.5 MMtCO2e, compared to 34.5 MMtCO2e associated with electricity use. *See id.* at 32.

Independence and Global Warming, Arizona already is feeling the effects of a hotter, drier climate and changing weather patterns. The governor noted that "Arizona and other western states are suffering from prolonged drought, decreased snowfall, increased and earlier snowmelt, and more severe and devastating forest and rangeland fires as a result of recent climate changes."[13]

As the Arizona Climate Change Action Plan noted, over the past 50 years, the climate in the western United States has warmed, on average, by 1.4 degrees Fahrenheit. Even more significant increases are predicted in the coming decades.[14]

A warmer climate could have drastic effects on the state's water supply. Increased evaporation in Arizona's reservoirs and water bodies means less water for consumption, irrigation, hydropower production, public and industrial supply, fish and wildlife habitat, and recreation.[15] Less snowfall and more rain in the winter coupled with an earlier snowmelt in Arizona's mountains could contribute to greater winter and spring flooding. Less spring and summer aquifer recharge could result in even greater declines in groundwater supplies.[16]

Hotter, drier temperatures also will exacerbate forest and wildfires in Arizona due to greater insect infestations and decreased

13. Testimony of Governor Janet Napolitano, U.S. House Select Committee on Energy Independence & Global Warming (Nov. 14, 2007).

14. "Climate models prepared by the Intergovernmental Panel on Climate Change (IPCC) predict that further June to August temperature increases of 3.6 to 9.0 degrees Fahrenheit are possible by 2040 to 2069 for western North America, while the most extreme warming scenario currently considered possible suggests that annual mean temperatures in the southwestern United States could increase potentially by up to 14 degrees Fahrenheit before the end of the century." CCAG, *supra* note 3 at 27 (citing Professor Steven Running, Numerical Terradynamic Simulation Group, University of Montana, published July 6, 2006 in ScienceXpress, the online version of the journal SCIENCE); Stainforth et al., *Uncertainty in the Predictions of the Climate Response to Rising Levels of Greenhouse Gases*, 433 NATURE 403-06 (Jan. 27, 2005), *available at* http://www.climateprediction.net/science/pubs/nature_first_results.pdf.

15. CCAG, *supra* note 3, at 27.

16. "Even conservative estimates of climate change predict significant potential impacts on the Colorado River system by the end of this century due to decreased snowfall and snow pack and increased evaporation, including a 15% reduction in annual runoff; a 40% decrease in basin storage; and a decline in hydroelectric power production to 45 to 56% of the historical average. The date of peak spring runoff could continue to advance, coming more than a month earlier in many Western rivers by the century's end." *Id.*

moisture. Already, the two worst fires in Arizona history have occurred in this decade.[17]

Warmer temperatures could also worsen Arizona's air pollution problems. During the winter of 2005-2006, the Phoenix metropolitan area suffered a record-breaking 143 consecutive days without measurable precipitation, which contributed to unprecedented levels of particulate matter (PM10) pollution in the area.[18] Increased temperatures also could contribute to increased ozone concentrations in the Phoenix metropolitan area, especially during the summer months.[19]

## III.
## EXECUTIVE ORDER 2005-02 AND THE CLIMATE CHANGE ADVISORY GROUP

On February 2, 2005, Governor Janet Napolitano signed Executive Order 2005-02 establishing Arizona's Climate Change Advisory Group (CCAG).[20] Appointed by the Governor, the CCAG was a diverse group of thirty-five stakeholders with broad perspectives and expertise about climate change. Governor Napolitano directed the CCAG to prepare an inventory and forecast of Arizona's GHG emissions (discussed above) and develop a Climate Change Action Plan with recommendations for reducing GHG emissions in Arizona under the coordination of the Arizona Department of Environmental Quality (ADEQ).[21]

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17. The Rodeo-Chediski fire in 2002 consumed nearly 500,000 acres in the White Mountains in northeastern Arizona. The Cave Creek Complex fire in 2005 burned nearly 250,000 acres in central Arizona near the Phoenix metropolitan area. *Id.* at 27-28. A July 6, 2006 study published in ScienceXpress, the online version of the journal SCIENCE, linked climate change to larger, longer-lasting wildfires in the Western United States, noting that more acreage and larger fires burned in the West between 1987 and 2003 than in the previous sixteen-year span. *See* A. L. Westerling et al., *Warming and Earlier Spring Increases Western U.S. Forest Wildfire Activity*, SCIENCE, July 6, 2006, http://www.sciencemag.org/cgi/rapidpdf/1128834.pdf. The co-author of the study, Dr. Thomas Swetnam of the University of Arizona's Tree Ring Research Laboratory, was a member of the Arizona CCAG.

18. CCAG, *supra* note 3, at 28. Between November 1, 2005 and March 15, 2006, the Phoenix metropolitan area exceeded the federal standard for PM10 on 30 days, and the Arizona Department of Environmental Quality (ADEQ) issued 25 High Pollution Advisories, more than in the previous decade combined. *Id.*

19. During the summer of 2007 the Phoenix metropolitan area experienced a record 32 days with temperatures in excess of 110 degrees. *See* Facts About 100 Degree Temperatures at Phoenix, http://www.wrh.noaa.gov/psr/general/history/index.php?page=100deg.

20. Exec. Order No. 2005-02, 11 Ariz. Admin. Reg. 2155–2156 (June 3, 2005), *available at* http://www.azsos.gov/aar/2005/23/governor.pdf.

21. *Id.*

In establishing the CCAG, the governor recognized that "scientific consensus has developed that increasing emissions of carbon dioxide (CO2), methane and other greenhouse gases released to the atmosphere are affecting the Earth's climate."[22] The Order noted that the Western Governors Association, a bipartisan group of governors in the Western United States, had recognized that "[t]he failure to take appropriate actions to address global climate change risks economic, environmental and societal damage."[23]

The Order also emphasized that "Arizona and other Western States have particular concerns about the impacts of climate change and climate variability on the environment, including the potential for prolonged drought, severe forest fires, warmer temperatures, increased snowmelt, reduced snow pack and other effects." The Order went on to declare that "actions to reduce GHG emissions, including increasing energy efficiency, conserving natural resources and developing renewable energy sources, may have multiple benefits including economic development, job creation, cost savings, and improved air quality."[24]

The CCAG met six times between July 2005 and June 2006. In addition to the meetings of the full CCAG, five sector-based technical work groups—essentially subcommittees of the CCAG—met a total of forty times via teleconference during this time.[25]

In August 2006, the CCAG produced its Climate Change Action Plan with forty-nine policy options for reducing GHG emissions in Arizona. Forty-five of the policy options were adopted unanimously by the CCAG, two received a supermajority of support, and two received a majority of support.[26]

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22. *Id.*

23. *Id.*

24. *Id.*

25. CCAG, *supra* note 3, at 1. The five Technical Working Groups were: Energy Supply (ES); Residential, Commercial, Industrial and Waste Management (RCI); Transportation and Land Use (TLU); Agriculture and Forestry (AF); and Cross-Cutting Issues (CC). The TWGs consisted of CCAG members and other individuals with interest and expertise in the issues addressed by each TWG. *Id.*

26. *Id.* at 2. The CCAG report emphasized the significant potential economic benefits to Arizona if the recommended policy options were implemented in the state, in addition to the GHG reductions that would be achieved:

> Reducing Arizona's GHG emissions to the recommended levels through full implementation of all of the CCAG's recommendations also would result in significant economic benefits for the state, including substantial economic cost savings, new job creation and enhanced economic development. The Center for Climate Strategies (CCS) has calculated overall net economic cost savings from the

The forty-nine policy options presented a wide range of actions that Arizona could take to reduce its GHG emissions significantly. The options fell within five different categories each covered by one of the five technical work groups: residential, commercial and industrial (RCI); energy supply (ES); transportation and land use (TLU); agriculture and forestry (AF); and cross-cutting issues (CC).[27] The options ran the gamut from major broad-based initiatives to more narrowly focused efforts. Some of the most significant options are listed below (along with their identifying numbers).

Residential, Commercial, and Industrial:

- Implement enhanced appliance efficiency standards (RCI-3).
- Adopt building standards, codes and design incentives for energy efficiency and smart growth (RCI-4 & RCI-5).
- Encourage distributed generation of renewable energy and combined heat and power (RCI-6 & RCI-7).
- Implement electricity pricing strategies that support energy conservation (RCI-8).

Energy Supply:

- Increase the environmental portfolio standard (ES-1).
- Explore a GHG cap and trade program (ES-4).
- Reduce barriers to renewables and distributed generation of clean energy (ES-9).
- Implement net metering and advanced metering for energy consumption (ES-10).

Transportation and Land Use:

- Adopt the clean car program (TLU-1).
- Implement policies to promote smart growth planning, infill, increased density, and transit-oriented and pedestrian-friendly development (TLU-2).
- Provide incentives for hybrid vehicles (TLU-7).
- Implement practices and procurement policies to achieve a lower-GHG emitting state vehicle fleet (TLU-13).

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CCAG's recommendations of more than $5.5 billion between 2007-2020, with additional significant cost savings also expected between 2020-2040 (although not calculated by CCS).

*Id.* at E5.

27. *See generally id.* at E6-E8, 9-16 and 39-84.

Cross-Cutting Issues:

- Set a state GHG reduction goal (CC-1).
- Establish a GHG emissions reporting mechanism (CC-2).
- Establish a GHG emissions registry (CC-3).

The CCAG determined that its recommended policy options, if fully implemented, could cut Arizona's GHG emissions by more than 69 MMtCO2e in 2020, achieving an emissions level more than five percent less than Arizona's 2000 level.[28] The CCAG also concluded that swift implementation of the policy options could produce cumulative GHG emissions reductions totaling more than 485 MMtCO2e for the period 2007-2020.[29] To that end, the CCAG strongly recommended "early and aggressive implementation" of the policy options and argued that "early action and implementation of [the] policy recommendations are critical to put Arizona quickly on the path toward significant emissions reductions."[30]

## IV.
## EXECUTIVE ORDER 2006-13

After receiving the CCAG's report, Governor Napolitano issued a new Executive Order in September 2006.[31] Executive Order 2006-13 did a number of things to set Arizona on the path toward reducing its GHG emissions, including:

- Establishing a goal to reduce Arizona's GHG emissions to the 2000 level by 2020 and to 50 percent below the 2000 level by 2040;
- Directing ADEQ to develop a GHG emissions reporting mechanism;
- Directing ADEQ to work with other states to establish a GHG emissions registry;
- Directing ADEQ to adopt and implement the California "Clean Car" GHG vehicle emissions standards;

28. *Id.* at E4.

29. The CCAG adjusted its estimate of the achievable GHG emissions reductions to avoid double-counting of reductions due to overlaps among the policy options. *Id.*

30. *Id.* at E3.

31. Exec. Order 2006-13 (Sept. 7, 2006), *available at* http://www.azclimatechange.gov/download/EO_2006-13_090806.pdf.

- Directing the Arizona Department of Transportation and ADEQ to implement a pilot program to allow hybrid vehicles to drive in high-occupancy-vehicle (HOV) lanes;
- Directing all state agencies beginning January 1, 2007 to purchase "only vehicles that are hybrids, meet low-GHG emissions standards, or use E-85 fuel, biofuels or other low-GHG alternative fuels," so that by January 1, 2010 "all State vehicles shall be hybrids, meet low-GHG emissions standards, or use E-85 fuel, biofuels or other low-GHG alternative fuels."[32]

The Executive Order also established a Climate Change Executive Committee (CCEC), consisting of representatives from various state agencies, to develop strategies to implement the remaining CCAG recommendations.[33]

## V.
## ARIZONA'S CLEAN CAR GHG STANDARDS

Pursuant to Executive Order 2006-13, and as recommended by the CCAG, ADEQ adopted the California Clean Car GHG standards in 2008.[34] As with the other states that have adopted the California standards, Arizona's rules cannot be implemented unless the U.S. Environmental Protection Agency (EPA) grants a waiver under the federal Clean Air Act (CAA) to the State of California. The granting of the waiver will enable the standards to go into effect in California and the other states that wish to adopt the more stringent California standards.[35]

On February 29, 2008, EPA denied California's request for a waiver.[36] Arizona joined California and many other states in litigation against EPA to overturn the denial.[37] More recently, President Obama has directed the new EPA Administrator Lisa Jackson to review the denial, and that review is now underway.[38]

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32. Certain state law enforcement vehicles, including "pursuit-rated" and covert vehicles, were exempted from the requirement. *Id.*

33. *Id.*

34. ARIZ. ADMIN. CODE §§ R18-2-1801 through R18-2-1812. *See* 14 Ariz. Admin. Reg. 2404-2628 (June 20, 2008), *available at* http://www.azsos.gov/aar/2008/25/final.pdf.

35. ARIZ. ADMIN. CODE § R18-2-1805(G). *See* 14 Ariz. Admin. Reg. 2404-2628.

36. 73 Fed. Reg. 12,156 (Mar. 6, 2008).

37. *See* 14 Ariz. Admin. Reg. 2405.

38. U.S. Envtl. Prot. Agency, Press Release, "EPA Revisits California Waiver Decision" (Feb. 6, 2009), *available at* http://yosemite.epa.gov/opa/admpress.nsf/a883dc3da7094f97852572a00065d7d8/8904b9648e72784e85257555005560f0!OpenDocument.

Like California's program, Arizona's Clean Car Standards establish tailpipe and fleetwide emission limits for new passenger cars, light-duty trucks and medium-duty passenger vehicles. The rules provide that, beginning in model year 2012, "no dealer or other person within this State shall deliver for sale, offer for sale, sell, import, deliver, purchase, rent, lease, acquire, receive, or register an affected vehicle of model year 2012 or later unless the vehicle has been certified by CARB and has received a CARB Executive Order."[39]

Under the rules an "affected vehicle" is "any passenger car, light-duty truck or medium-duty vehicle with 7,500 miles or fewer on its odometer, provided that a vehicle sold by a dealer is an affected vehicle if it had 7,500 miles or fewer on its odometer statement at the time the dealer acquired the vehicle."[40] The standards require vehicles sold in Arizona to emit 30 percent fewer GHG emissions relative to current levels.[41] The standards will go into effect two years after EPA grants the California waiver or two years after Congress authorizes states to adopt such GHG vehicle emissions standards.[42] Under the rules, each vehicle manufacturer's fleet must comply with the average greenhouse gas exhaust emission limits for passenger car, light-duty truck, medium-duty passenger vehicle weight classes.[43] Each manufacturer must demonstrate that all of its passenger cars and light-duty trucks delivered for sale in Arizona meet the emission standards for GHGs. The manufacturer may accrue greenhouse gas credits and debits and use credits based on the number of

39. ARIZ. ADMIN. CODE § R18-2-1802 (2008). CARB is the California Air Resources Board.

40. *Id.* § R18-2-1801. There are a few limited exemptions to the restriction. *See id.* § R18-2-1802(D).

41. *Id.* § R18-2-1805. ADEQ estimated that by 2020, if the GHG vehicle standards in Arizona, California and the other states that have already adopted them were implemented on schedule, GHG emissions would be reduced in those thirteen states by 434 million MTCO2e (metric tons carbon dioxide equivalent), 89 percent more than under the federal corporate average fuel economy (CAFÉ) program, which the Bush EPA used as its justification for denying the California waiver request. 14 Ariz. Admin. Reg. 2413, (June 20, 2008) (citing California Air Resources Board comparison of GHG reductions for the U.S. and Canada under U.S. CAFE standards and CARB GHG regulations (Feb. 25, 2008)), *available at* http://www.azsos.gov/aar/2008/25/final.pdf.

42. ARIZ. ADMIN. CODE § R18-2-1801(23). *See* ARIZ. ADMIN. CODE § R18-2-1801(22) (definition of "GHG model year").

43. ARIZ. ADMIN. CODE § R18-2-1805.

vehicles subject to the GHG requirements that it produces and delivers for sale in Arizona.[44]

Each manufacturer will have to submit a report to ADEQ that projects the fleet average GHG emissions for vehicles expected to be delivered for sale in Arizona, as well as end-of-model year data that calculates the fleet average GHG emissions for the model year just ended.[45] If the report shows that the manufacturer has not complied with the fleet average emission standards, the manufacturer must submit a Fleet Average Remediation Report describing how the manufacturer intends to equalize any accrued debits and how the manufacturer plans to achieve compliance with the fleet average in future model years.[46]

Each manufacturer also must comply with a Zero Emissions Vehicle (ZEV) sales requirement based on total vehicle sales in Arizona, beginning with model year 2012 for passenger cars and light-duty trucks produced and delivered for sale in Arizona.[47] A manufacturer can meet the ZEV sales requirement in one of two ways. The manufacturer can sell a certain number of ZEVs in Arizona based on the number of passenger vehicles and light-duty trucks that the manufacturer delivers for sale in the state. Alternatively, the manufacturer could meet the entire ZEV mandate with a combination of ZEVs, Partial ZEVs and Advanced Technology PZEVs.[48]

While seeking significant reductions in GHG emissions from passenger vehicles, the rules provide flexibility to manufacturers to meet the standards. Manufacturers can average emissions across their entire vehicle mix, aggregate the GHG pollutants into equivalent emissions and bank and trade excess emission credits between vehicle classes and manufacturers.[49] In fact, manufacturers can earn and bank vehicle equivalent credits for any ZEV, Partial ZEV or Advanced Technology Partial ZEV delivered for sale in Arizona on or after January 1, 1999. The credits may be used at a later time to comply with the ZEV sales requirement.[50]

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44. *Id.*
45. *Id.*
46. *Id.*
47. *Id.* § R18-2-1806.
48. *Id.*
49. *Id.* § R18-2-1807.
50. *Id.*

Because nearly 40 percent of GHG emissions in Arizona are directly attributable to vehicle emissions, the Arizona Clean Car Standards will achieve sizeable reductions of GHG emissions in the years ahead if implemented, as well as help address other air quality problems. The rules will play an especially important role because vehicle miles traveled (VMT) are increasing even more rapidly than the population in Arizona.[51]

## VI.
## ARIZONA'S RENEWABLE ENERGY STANDARD

The Arizona Corporation Commission (ACC), the state's public utility regulatory body, has adopted an aggressive renewable energy standard (RES) that also will help reduce GHG emissions.[52] An older Renewable Portfolio Standard (RPS) had required that 1.1 percent of all electricity sold in Arizona come from renewable sources (based on kilowatt hours sold).[53] In November 2006, however, the ACC adopted a new RES and increased the renewable energy requirement to 15 percent by 2025.[54]

The new, more aggressive RES makes a wide range of energy sources eligible to satisfy the renewable requirement, including biogas and biomass electricity generators, certain hydropower facilities, fuel cells that use renewable fuels, geothermal generators, hybrid wind and solar electric generators, landfill gas generators,

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51. 14 Ariz. Admin. Reg. 2411 (June 20, 2008), *available at* http://www.azsos.gov/aar/2008/25/final.pdf.

52. ARIZ. ADMIN. CODE §§ R14-2-1801 to R14-2-1815. *See* Ariz. Corp. Comm'n Decision No. 69127 (Nov. 14, 2006), *available at* http://www.deaa-arizona.org/dox/Renewable_Energy_Standard_and_Tariff_-_REST.pdf.

53. *See* Ariz. Corp. Comm'n Decision No. 69127, *available at* http://www.deaa-arizona.org/dox/Renewable_Energy_Standard_and_Tariff_-_REST.pdf.

54. *Id.* The renewable energy requirement is increased 0.25% each year from 2006-2009. From 2010-2015 the requirement increases 0.5% annually, and from 2016-2024 it increases 1.00% each year until it reaches 15%. ARIZ. ADMIN. CODE § R14-2-1804 (2007). The CCAG had recommended a renewable energy requirement of 26% by 2025 but was supportive of the ACC's effort:

> The CCAG recognized that the ACC has related proceedings underway and believes that approval of the ACC's current rule-making effort would provide significant GHG emissions reductions. The CCAG recommended the more aggressive alternative (ES-1c) because of its cost-effectiveness and significant emissions reductions.

CCAG, *supra* note 3, at 64.

solar electricity resources, wind generators and certain "distributed renewable energy resources."[55]

The new RES also has a distributed renewable energy requirement. The RES requires that by 2012, 30 percent of electricity in Arizona must come from distributed sources, up from 5 percent in 2007.[56] Moreover, the RES further requires that at least half of the distributed energy requirement must be met with residential applications, with the remaining half from nonresidential, nonutility applications.[57]

## VII.
## THE WESTERN CLIMATE INITIATIVE

In February 2007 Governor Napolitano joined with the governors of California, New Mexico, Oregon and Washington to create the Western Climate Initiative (WCI).[58] The governors agreed to "collaborate in identifying, evaluating and implementing ways to reduce GHG emissions in our states collectively and to achieve related co-benefits."[59]

The governors specifically agreed to set an overall regional goal within six months for reducing GHG emissions from their states and within eighteen months to design a regional GHG cap-and-trade program.[60] The governors also agreed to participate in a "multi-state GHG registry to enable tracking, management and

55. ARIZ. ADMIN. CODE § R14-2-1802 (2007). The RES specifically excludes nuclear or fossil fuel from the definition of a renewable energy resource.

56. The distributive energy requirement increases 5% each year until it reaches 30% in 2012. *See id.* § R14-2-1805.

57. *Id.* In addition to the new RES, the ACC is adopting rules to require net metering and interconnections for customers using electricity from renewable energy resources (defined as biogas, biomass, geothermal, hydroelectric, solar and wind), fuel cells or combined heat and power that also will help reduce GHG emissions in Arizona. *See* Ariz. Corp. Comm'n Decision No. 70567 (Oct. 23, 2008) (Appendix A, setting forth proposed rules ARIZ. ADMIN. CODE §§ R14-2-2301 to -2-2308), *available at* http://images.edocket.azcc.gov/docketpdf/0000089952.pd. The CCAG had recommended adoption of net metering and other market mechanisms to promote renewable energy in Arizona. *See* Policy Option ES-10, CCAG, *supra* note 3, at 65.

58. *See* Western Regional Climate Action Initiative Agreement (Feb. 26, 2007), *available at* http://www.westernclimateinitiative.org/component/remository/general/WCI-Governors-Agreement/. The effort originally was called the Western Regional Climate Action Initiative. The name later was shortened to the Western Climate Initiative.

59. *Id.* at 2.

60. *Id.*

crediting for entities that reduce GHG emissions."[61] (The CCAG had unanimously recommended a cap and trade program and an emissions registry.)[62]

In signing the document creating the WCI, Governor Napolitano made clear her view that the federal government had failed in its responsibility to address climate change in any real way, declaring: "In the absence of meaningful federal action, it is up to the states to take action to address climate change and reduce greenhouse gas emissions in this country."[63]

The document also made clear that the collaboration among the states would go beyond the creation of a cap-and-trade program. The governors pledged to continue their individual and collaborative efforts to promote the development and use of clean and renewable energy, increase energy efficiency, advocate for regional and national climate policies, and identify measures to adapt to climate change. The governors also welcomed other states, tribes, Canadian provinces and Mexican states to join the initiative as either full "partners" or "observers." And since February 2007, the WCI has expanded substantially. The WCI now has eleven partners: seven U.S. states—Arizona, California, Montana, New Mexico, Oregon, Utah and Washington—and four Canadian provinces—British Columbia, Manitoba, Ontario and Quebec.[64] Together the WCI Partners represent over 70 percent of the Canadian economy and 20 percent of the U.S. economy.[65]

In August 2007, the WCI announced its goal to reduce GHG emissions in the WCI region to 15% below 2005 levels by 2020.[66] On September 23, 2008 the WCI released the design for its cap

61. Western Regional Climate Action Initiative Agreement, *supra* note 58. *See infra* Part VIII.C. All WCI members participate in The Climate Registry.

62. Policy Option ES-4, CCAG, *supra* note 3, at 64.

63. Press Release, "Five Western Governors Announce Regional Greenhouse Gas Reduction Agreement" (Feb. 26, 2007), *available at* http://www.westernclimate initiative.org/component/remository/general/WCI-National-Press-Release/.

64. Fourteen jurisdictions participate as observers to the WCI: six U.S. states (Alaska, Colorado, Idaho, Kansas, Nevada and Wyoming), two Canadian provinces (Saskatchewan and Nova Scotia) and the six Mexican states that border the U.S. (Baja California, Chihuahua, Coahuila, Sonora, Nuevo Leon and Tamaulipas). Western Regional Climate Initiative, http://www.westernclimateinitiative.org/ (last visited June 30, 2009).

65. Press Release, Western Climate Initiative, U.S. States, Canadian Provinces Announce Regional Cap-and-Trade Program to Reduce Greenhouse Gases (Sept. 23, 2008), *available at* http://www.westernclimateinitiative.org/documents.

66. Western Climate Initiative, "Statement of Regional Goal" (Aug. 22, 2007), http://www.westernclimateinitiative.org/documents.

and trade program.[67] As proposed in the design document, when fully implemented, the WCI cap-and-trade program will cover nearly 90 percent of the GHG emissions in the WCI region.[68]

Participating in the WCI is critical for a fast-growing state like Arizona which has a large percentage of its GHG emissions (nearly 40 percent) related in great part to the generation of electricity from coal-fired power plants. A market-based cap and trade program will provide the kind of flexibility in reducing GHG emissions from energy production and usage in Arizona that will be needed as the state's population continues to grow. Moreover, the WCI cap and trade program will allow covered entities to use offsets and allowances from other trading systems to meet its GHG reduction requirements and will provide early reduction allowances for entities that reduce their emissions prior to the start of the program in January 2012.[69]

## VIII.
## OTHER REGIONAL EFFORTS

Arizona's participation in the WCI builds upon other regional initiatives in which the state is participating.

### A. *Arizona-Sonora Climate Change Initiative*

In a Declaration of Cooperation signed on June 18, 2005, Arizona and Sonora joined together to create the Arizona-Sonora Climate Change Initiative.[70] In the Declaration, the two states agreed to:

- Work towards developing an Arizona-Sonora regional inventory of GHG emissions;
- Coordinate the identification of emissions reduction opportunities along the Arizona-Sonora border and of carbon sequestration projects throughout the Arizona-Sonora region;

67. Western Climate Initiative, Design Recommendations for the WCI Regional Cap-and-Trade Program (Sept. 23, 2008), http://www.westernclimateinitiative.org/the-wci-cap-and-trade-program/design-recommendations.

68. *Id.* Because the WCI cap and trade program will not cover 100% of the GHG emissions in the region, the design document spells out that the cap and trade program will work with other "complementary" policies in effect in the states and provinces (such as the Clean Car rules) to reach the WCI regional goal.

69. *Id.*

70. Declaration of Cooperation to Establish the Arizona-Sonora Regional Climate Change Initiative (June 18, 2005), *available at* http://www.azclimatechange.gov/initiatives/download/signed_agreement.pdf.

- Facilitate project certifications through the Mexican national Clean Development Mechanism designated national office; and
- Develop a Climate Change Advisory Group in Sonora.

### B. *Southwest Climate Change Initiative*

On February 28, 2006, almost a year to the day before the WCI was launched, Arizona and New Mexico joined together to create the Southwest Climate Change Initiative (SWCCI).[71] The states agreed "to collaborate in identifying, evaluating and implementing ways to reduce greenhouse gas emissions and achieve related co-benefits."[72] The document creating the SWCCI stated that the collaboration between Arizona and New Mexico could include but would not be limited to:

- Development of consistent approaches for measuring, forecasting and reporting emissions of greenhouse gases;
- Development of consistent approaches to recognize and give credit for public and private actions to reduce greenhouse gas emissions;
- Identification and promotion of climate change mitigation actions, energy efficient technologies and clean and renewable energy sources;
- Improvement of institutional capacity to address climate mitigation needs;
- Identification of and advocacy for regional and national climate policies that reflect the needs and interests of Southwestern states; and
- Identification and evaluation of policy options for reducing greenhouse gas emissions within individual states and jointly across state, regional and international borders.[73]

The work of Arizona and New Mexico in creating and going forward with the WCI is a direct result of the states' collaboration in the SWCCI.

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71. Press Release, State of Ariz. Exec. Office of Governor Janet Napolitano, Governors Napolitano and Richardson Launch Southwest Climate Change Initiative (Feb. 28, 2006), *available at* http://www.azclimatechange.gov/download/O40F8086.pdf.

72. Southwest Climate Change Initiative Agreement (Feb. 28, 2006), *available at* www.azclimatechange.gov/download/O40F8085.pdf.

73. *Id.*

### C. *The Climate Registry*

As recommended by the CCAG and as required by the WCI agreement, Arizona also participates in The Climate Registry (TCR). TCR's mission statement declares that it "is a nonprofit collaboration among North American states, provinces, territories and Native Sovereign Nations that sets consistent and transparent standards to calculate, verify and publicly report greenhouse gas emissions into a single registry."[74] TCR's Board of Directors presently consists of forty-one U.S. states (including Arizona), eleven Canadian provinces, four Indian tribes, and six Mexican states.[75] TCR is designed to support both voluntary and mandatory reporting of GHG emissions. Board members of TCR have agreed to:

- Work to establish and endorse a voluntary entitywide GHG reporting and verification system;
- Encourage entities to voluntarily report their emissions to TCR;
- Work with TCR to identify a set of GHG emissions minimum data quantification standards to be recognized in both voluntary and mandatory reporting and emissions reductions programs; and
- Incorporate these minimum data quantification standards into any mandated GHG reporting and emissions reduction program.[76]

Consistent with this commitment, Arizona and other WCI partners are working closely with TCR to develop protocols for reporting GHG emissions in connection with the WCI's cap and trade program and providing early reduction allowances. In the interim, Arizona is encouraging entities in the state to report their GHG emissions voluntarily to TCR to ensure accurate data and provide good baseline information.

74. The Climate Registry, Mission Statement, http://www.theclimateregistry.org/about/mission-statement.php (last visited Mar. 29, 2009).

75. The Climate Registry, Board of Directors, http://www.theclimateregistry.org/about/board-of-directors.php (last visited Mar. 28, 2009).

76. The Climate Registry, Statement of Principles and Goals, http://www.theclimateregistry.org/downloads/Statement_of_Principles_and_Goals.pdf (last visited Mar. 29, 2009).

## IX.
## OTHER ARIZONA EFFORTS

Others efforts underway in Arizona also will help reduce GHG emissions in the state.

### A. *Executive Order 2005-05*

New state buildings in Arizona are required to be energy efficient. Executive Order 2005-05 issued by Governor Napolitano on February 11, 2005, requires that all new state-funded buildings in Arizona must (i) derive at least 10 percent of their energy from renewable resources and/or the purchase of renewable energy credits; (ii) meet energy efficiency standards;[77] and (iii) meet at least the Leadership in Energy and Environmental Design (LEED) silver standard.[78]

### B. *Smart Growth & the Growth Scorecard*

Arizona also is working to implement smart growth practices. On January 8, 2007, Governor Napolitano issued Executive Order 2007-05 entitled "Promoting Smarter Growth." The Order established the Arizona Growth Cabinet, a group consisting of several state agencies, and charged it with developing and implementing "a smart growth and development process that integrates land and water use planning and development with the planning and development of existing and future state infrastructure."[79] To ensure that state resources promote smart growth rather than facilitate deleterious sprawl, Executive Order 2007-05 also ordered state agencies to "direct future discretionary funding to applicant communities that agree to participate and abide by this smart growth and development process."[80]

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77. Executive Order 2005-05 specified that all new state-funded buildings have to meet energy standards set forth in state law for several large state agencies, requiring them to reduce energy use in their buildings by 10% per square foot of floor area by July 1, 2008, and by 15% by July 1, 2011. *See* ARIZ. REV. STAT. ANN. § 34-451 (2009). That statute also requires the Arizona Department of Commerce to adopt energy conservation standards for new state-funded buildings and requires all state agencies to procure Energy Star products unless shown to be not cost-effective. Arizona also has adopted energy efficiency standards for various large appliances and other devices. *See id.* § 44-1375.02.

78. Executive Order 2005-05 incorporated Executive Order 2003-14, issued April 30, 2003, which required all state agencies to "reduce energy costs by reducing energy consumption and increasing energy conservation."

79. Exec. Order 2007-05 (Jan. 8, 2007), *available at* http://www.azclimatechange.gov/download/EO2007-05.pdf.

80. *Id.*

As a result of Executive Order 2007-05, Arizona has developed a "growth scorecard" designed to provide financial incentives to communities throughout the state to follow smart growth principles.[81] The scorecard is based on Growing Smarter Guiding Principles developed by the Arizona Growing Smarter Oversight Council, Arizona's planning statutes, and recognized smart growth techniques and tools (such as mixed use zoning, pedestrian oriented design, focusing growth in areas around transportation and regional planning).[82]

## X.
## CONCLUSION

Arizona has been a leader in taking action to address climate change and reduce GHG emissions. With the election of President Obama the federal government is moving toward establishing a national program to reduce GHG emissions in this country. As the federal government works to define the nature and scope of its approach, it will be all the more important for Arizona to continue its efforts to not only slow the rapid growth of emissions in the state but also be in a position to share the lessons it is learning and ensure that any federal solution works for the state. Although Governor Napolitano has left office to join President Obama's Cabinet, it is hoped that Arizona will continue its important work in this area under the state's new leadership.

81. Ariz. Dep't of Commerce, Arizona Smart Growth Scorecard, http://www.azcommerce.com/SmartGrowth/Scorecards/.

82. *Id.*