Joint Legislative Budget Committee
Staff Memorandum

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TO: Members of the Joint Legislative Income Tax Credit Review Committee

FROM: Hans Olofsson, Chief Economist

SUBJECT: 2018 INCOME TAX CREDIT REVIEW

Each year, the JLBC Staff prepares background materials for the Joint Legislative Income Tax Credit Review Committee as prescribed by A.R.S. § 43-222. It is our understanding, however, that the Committee will not meet this year. Given that our background information may still be of interest, we are now transmitting our material (including a PowerPoint slideshow) for the credits on the 2018 review schedule.

A separate memo provides confidential data on these credits where applicable.

Background

Laws 2002, Chapter 238 established the Joint Legislative Income Tax Credit Review Committee, and specified a schedule for review of corporate and individual income tax credits. Pursuant to A.R.S. § 43-222, there are 3 credits scheduled for review in 2018, which are listed below.

Credit — Page #

The Joint Legislative Income Tax Credit Review Committee is charged with determining the original purpose of each of the existing income tax credits and establishing a standard for evaluating the success or failure of the credit. Pursuant to A.R.S. § 43-221, the standard for evaluation of the credits may include: (1) the history, rationale and revenue impact, (2) the benefit to the state in various economic terms, and (3) the complexity in the use and administration of the credit.

Pursuant to Laws 2015, Chapter 199, the Department of Revenue (DOR) is authorized to disclose statistical information gathered from confidential tax credit information to this Committee, JLBC Staff and legislative staff. DOR considers tax credit information to be confidential if: (1) 3 or fewer taxpayers claimed the credit, or (2) 90% or more of the total credit used to offset tax liability was taken by 1 taxpayer. All the tax credits on the 2018 review list include confidential statistical information.

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We have provided a separate memo to the Committee that contains the confidential credit data furnished by DOR. According to DOR, each recipient of this confidential information pursuant to Laws 2015, Chapter 199 is bound by confidentiality laws and therefore should not release the information to others. Any discussions regarding this memo must be held in Executive Session.

Limitations

There are certain limitations affecting the evaluation of income tax credits. The lack of performance measures for tax credits is one such example. None of the credits reviewed this year has stated performance measures or goals. Laws 2002, Chapter 238, requires any new credit to include a clause that explains the rationale and objective of the credit (A.R.S. § 43-223).

Moreover, the evaluation of tax credits in terms of their economic benefits to the state is often difficult to conduct since the data required to do so is rarely available.

2018 Review

The following information is provided (where applicable) for each of the credit categories:

Description - The definition of the tax credit, including how the credit is calculated.

Refundable - Whether the credit is refundable or nonrefundable. A nonrefundable credit can never exceed the taxpayer's tax liability. Instead, any amounts not used to offset the taxpayer's liability in a taxable year either can be carried forward to future tax years or must be forfeited in the same tax year.

By contrast, a refundable credit is allowed to exceed the taxpayer's tax liability and any excess amounts are refunded to the taxpayer.

Carry Forward - Whether any unused nonrefundable credit may be carried forward into subsequent tax years, and if so, for how many years.

History and Rationale - The year the tax credit was implemented, revisions to the credit since its enactment, and relevant information regarding the intended purpose of the credit.

Revenue Impact - Based on data reported by DOR, information for each tax year on the number of claimants, the amount of total available credit, credit used, and credit carried forward to a subsequent tax year.

Economic Benefits - A summary of information available related to any economic benefits associated with each tax credit, including economic development, new investments, job creation or retention of existing jobs, and any other economic benefits that may be specific to each credit.

Complexity - Information related to the complexity of administration and application of each tax credit, including the perspective of the state agencies administering the credit, as well as the trade associations and representatives of the corporations and/or individuals claiming the credit.

Potential Performance Measures - A listing of potential measures that might be used to evaluate each of the income tax credits.

The reported information was obtained from a variety of sources. The JLBC Staff reviewed the statutes establishing each of the credits, as well as the tax forms and instructions used by businesses and individuals to claim the credits.

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The JLBC Staff also reviewed summaries and minutes of committee and subcommittee hearings that were held prior to adoption of the credits. Various agencies were contacted, including the Department of Revenue and the Arizona Commerce Authority.

HO:kp
Attachment
xc: Reed Spangler, Senior Policy Advisor, Senate
Sean Laux, Policy Advisor, Senate
Fareed Bailey, Analyst, Senate Finance Committee
Ryan Sullivan, Policy Advisor, House
Alan Elder, Policy Advisor, House
Jennifer Thomsen, Analyst, House Appropriations Committee

Research & Development Tax Credit

Research and Development Tax Credit

Summary

- The cost of the corporate tax credit program was $70.5 million in FY 2018. This includes $66.0 million in *nonrefundable* credits and $4.5 million in *refundable* credits. The cost of the additional credit for research at a state university, which is capped at $10 million annually, was not reported.
- The cost of the individual tax credit program, including both nonrefundable and refundable credits, was $13.1 million in FY 2018.
- Since the inception of the *refundable* credit program in 2010, the annual credit authorization cap of $5 million has been reached each year.
- The corporate credit had an *unlimited* carry forward of $1.2 billion in Tax Year (TY) 2016. Corporations may have insufficient tax liability, however, to ever claim most of the carry forward credits.
- The *limited* carry forward for the corporate credit decreased from $541 million in TY 2003 to $39 million in TY 2016. Limited carry forward amounts cannot be claimed after TY 2017.
- A total of 974 corporations and 1,713 individuals claimed the credit between 1993 and 2016.

Statute

A.R.S. § 43-1168 (Corporate Income Tax)
A.R.S. § 43-1074.01 (Individual Income Tax)
A.R.S. § 41-1507 (Certification of Refundable Credit)
A.R.S. § 41-1507.01 (Certification of Basic Research Payments to a University)

Description

This credit was last reviewed in 2013. The description of the credit as well as other sections of the credit review have been updated from our 2013 report when relevant.

The Research and Development (R&D) credit is a corporate and individual income tax credit for increased research activities conducted in this state, including research conducted at a state university and funded by the taxpayer. The current R&D program provides both nonrefundable and refundable tax credits. The nonrefundable credit program is administered by the Department of Revenue (DOR) whereas the refundable program is administered by the Arizona Commerce Authority (ACA).

The state's R&D credits are calculated based on definitions under the federal R&D credit program, except that the qualified research must be conducted in Arizona. Qualified research under the federal credit program refers to research undertaken for the purpose of discovering information that is technological in nature and the application of which must be intended for use in developing a new or improved business component (such as an invention or production process). In addition, the research activities must be elements of a process of experimentation relating to a new or improved function, performance, reliability, or quality.

There are 2 categories of research and development expenditures that are eligible for the R&D credit: basic research payments and qualified research expenses. Under the federal definition, *basic research payments* refer to the amounts a taxpayer paid in cash, under a written contract, to a qualified university, scientific research organization, or grant organization. *Qualified research expenses* refer to employee wages, cost of supplies, rental or lease costs of computers, and contract expenses paid to nonemployees (contractors). The R&D credit can only be claimed for research payments and expenses above a stipulated *base amount*, which is determined based on the ratio of a company's qualified research expenses to its gross receipts during a certain base period. For this reason, the R&D credit is calculated based on the amount of payments and expenses in excess of the base amount (hereafter referred to as "excess research expenditures").

The state R&D credit is calculated as a percentage of a company's excess research expenditures. If the excess amount is $2.5 million or less, the credit is 24% of this amount, up to a maximum of $600,000. For excess expenditures greater than $2.5 million, the credit is equal to $600,000 plus 15% of the amount exceeding $2.5 million.

Nonrefundable R&D Program

The nonrefundable credit program, which is administered by DOR, consists of a general R&D credit and an additional R&D credit for university research. Each of the 2 nonrefundable credits is described in more detail below.

General R&D Credit

The original ("general") nonrefundable R&D program was enacted in 1992 for corporations and in 1999 for individuals. As discussed in more detail in the *History and Rationale* section below, the Legislature has modified the credit program several times since the original enactment.

The general R&D credit can be carried forward for up to 15 years. However, credit carryovers from years prior to 2003 are limited. The amount carried forward from these years is the lesser of the taxpayer's liability or $500,000 minus the new credit created in the current year. Credit carryovers from 2003 and subsequent years are not limited by statute. However, in practice, carry forwards from these years are still limited in the sense that these amounts can never exceed the taxpayer's liability. For a more detailed discussion on credit carry forwards, see *Revenue Impact* section below.

Additional R&D Credit for University Research

The university R&D credit, which was enacted in 2011, is a nonrefundable individual and corporate income tax credit available to taxpayers that make basic research payments to a university under the jurisdiction of the Arizona Board of Regents (ABOR). Universities under the jurisdiction of ABOR are Arizona State University, University of Arizona, and Northern Arizona University. The university R&D credit is 10% of the amount of basic research payments above the base amount paid to one or more of the state universities. Since the university R&D credit is in addition to the regular R&D credit, some taxpayers can receive credits of up to 34% of their qualified basic research payments.

Beginning in TY 2015, taxpayers cannot claim the university R&D credit unless they first obtain certification from ACA that the basic research payments meet the statutory requirements. After receiving certification from ACA, taxpayers apply for final credit approval from DOR. The credit, which became effective January 1, 2012, is subject to an aggregate cap of $10 million per calendar year. Unused university R&D credits can be carried forward for up to 5 years.

Refundable R&D Program

The refundable R&D credit, which is administered by ACA, was enacted during the 2010 regular session. This credit is only available to taxpayers that employ fewer than 150 full-time employees. Other requirements to qualify for the refundable credit are the same as under the nonrefundable R&D program. The refundable credit is limited to 75% of the amount by which the tax filer's credit exceeds his tax liability in the taxable year. The remaining 25% of the excess credit must be forfeited by the taxpayer.

To claim the refundable R&D credit, the taxpayer must first be approved by ACA. The taxpayer submits an application to ACA and upon approval receives a Certificate of Qualification. ACA is authorized to approve refunds of up to $5 million per calendar year. The certificate is issued on a first come, first served basis. The refundable credit has been in effect since TY 2010.

History and Rationale

The corporate R&D credit was first passed and signed into law in July 1992 (Laws 1992, Chapter 296) and became effective in TY 1993. The credit has been amended several times. The initial statute had a sunset provision; the credit is now permanent. The credit was capped as described above through TY 2002.

Beginning in TY 2003, the credit is no longer limited. Laws 1999, 1st Special Session, Chapter 5 extended the credit to individual income tax filers (shareholders of S corporations, partners of partnerships, and sole proprietors), beginning in TY 2001.

Laws 2008, Chapter 290 increased the amounts of the excess research expenditures that can be claimed under the R&D program. For excess amounts of up to $2.5 million in TY 2010, the credit percentage was increased from 20% to 22%. For excess amounts greater than $2.5 million in TY 2010, the credit percentage was raised from 11% to 13%. In the period from TY 2011 through TY 2017, Chapter 290 increased the credit percentages to 24% and 15%, respectively. Laws 2017, Chapter 340 extended these credit percentages through TY 2021. Beginning in TY 2022, the credit calculation reverts to the credit percentages used prior to TY 2010, as shown in the table below.

Tax Year	If Expenses ≤ $2.5 million, Credit is:	If Expenses > $2.5 million, Credit is:
2010	22% of amount up to $550,000	$550,000 plus 13% of amount exceeding $2.5 million.
2011 - 2021	24% of amount up to $600,000	$600,000 plus 15% of amount exceeding $2.5 million.
2022 -	20% of amount up to $500,000	$500,000 plus 11% of amount exceeding $2.5 million.

Laws 2010, Chapter 289 prohibits a taxpayer from claiming both the R&D credit and the solar liquid fuel tax credit (A.R.S. § 43-1085.01 and § 43-1164.02) for the same expenses. Laws 2010, Chapter 312 created the refundable R&D program administered by ACA. Laws 2011, 2nd Special Session, Chapter 1 established the additional R&D credit for university research.

According to historical information, the purpose and rationale for the initial R&D credit program was to create a business climate in Arizona that would be competitive with other states seeking to attract companies emphasizing research and technology. During the 1992 session, the Ways and Means Committee was told that 16 states had similar legislation. According to KBKG, a national tax consulting firm, Arizona is one of 39 states in the nation that currently offer R&D tax credits.

Revenue Impact

Beginning in FY 2015, DOR is required to report individual income tax credit use on a fiscal year basis. The same requirement applies to corporate income tax credits, beginning in FY 2016. The cost of the corporate and individual nonrefundable and refundable R&D credits by fiscal year, as reported by DOR, is displayed in *Table 1* below.

Table 1

Research and Development (R&D) Credit Use by Fiscal Year

Type of Credit	FY 2015	FY 2016	FY 2017	FY 2018
Individual - Nonrefundable	$5,474,899	$12,048,304	$12,835,382	$12,910,083
Corporate - Nonrefundable	Not Available	93,354,287	91,640,881	66,040,289
Individual - Refundable	220,020	55,704	111,872	206,665
Corporate - Refundable	Not Available	3,206,439	4,546,323	4,515,804
Individual – University Research	0	0	0	0
Corporate – University Research	Not Available	Not Releasable	Not Releasable	Not Releasable
Total 1/	$5,649,919	$108,664,734	$109,134,458	$83,672,841

1/ Total amount excludes data that was either not available or releasable.

Based on data provided by DOR, the combined cost of the corporate R&D (nonrefundable and refundable) credit program was $96.6 million in FY 2016, $96.2 million in FY 2017, and $70.5 million in FY 2018. As footnoted in *Table 1*, these amounts exclude (due to taxpayer confidentiality) the corporate additional R&D credit for university research, which is capped at $10 million annually. The combined cost of the individual R&D credit program was $5.7 million in FY 2015, $12.1 million in FY 2016, $12.9 million in FY 2017, and $13.1 million in FY 2018. As shown in *Table 1*, the total cost of all R&D credits for which DOR has released data was $108.7 million in FY 2016, $109.1 million in FY 2017, and $83.7 million in FY 2018.

DOR also reports credit use on a tax year basis. This data is available from when the credit was first established. It should be noted that this data differs from credit use by fiscal year for several reasons, including the filing of extended and amended tax returns. *Table 2* shows the cost of the corporate tax credit by tax year since the credit's inception, while *table 3* displays the same information for the individual tax credit.

Table 2

Research and Development Credit – Corporate Credit Claims by Tax Year

Tax Year	# of Claimants	Total Expenses & Payments	New Credit Available	Total Credit Available	Credit Used	Limited Carry Forward	Unlimited Carry Forward	Amount Refunded
1993	23	$5,558,699	$617,710	$617,710	$403,663	$494,032	N/A	
1994	89	156,284,525	5,206,158	5,445,055	3,062,056	26,466,029	N/A	
1995	85	161,933,770	8,595,822	9,559,521	6,149,046	49,679,229	N/A	
1996	111	332,189,906	13,461,458	15,758,856	9,881,387	100,481,239	N/A	
1997	133	275,026,626	17,352,202	19,483,124	11,089,063	82,117,051	N/A	
1998	129	482,316,974	17,873,965	19,369,112	8,963,229	191,337,518	N/A	
1999	140	649,466,689	18,989,822	20,552,034	10,457,350	295,172,070	N/A	
2000	129	954,184,305	22,933,366	24,867,021	9,513,397	426,481,296	N/A	
2001	155	599,557,926	39,197,993	43,615,872	11,173,383	483,382,825	N/A	
2002	171	512,773,060	40,550,586	54,572,068	12,561,453	529,742,479	N/A	
2003	192	592,446,979	77,267,901	95,854,303	32,530,836	540,641,483	46,862,805	
2004	218	732,890,042	94,630,488	135,209,794	37,402,219	537,643,076	105,386,972	
2005	226	831,389,622	106,754,920	221,016,606	49,151,017	533,657,103	162,751,812	
2006	252	911,170,055	116,624,033	284,537,850	56,602,211	518,037,947	222,927,710	
2007	255	871,697,332	112,722,625	337,812,598	57,979,335	507,126,321	275,615,694	
2008	265	816,879,517	105,602,994	381,029,726	49,572,348	499,996,494	328,402,862	
2009	278	936,569,707	121,279,266	454,772,808	33,073,818	484,075,302	418,717,725	
2010	314	985,844,481	147,012,095	564,367,099	59,190,939	470,171,291	497,329,242	4,015,985
2011	339	1,147,697,265	190,866,312	689,244,452	82,456,213	420,478,027	599,696,103	3,939,816
2012	353	1,163,975,194	193,738,654	795,498,971	74,143,400	384,530,076	713,663,045	4,184,353
2013	347	1,221,995,819	203,110,526	897,406,126	93,321,154	313,081,082	794,172,156	4,555,687
2014	350	1,270,125,298	210,599,951	1,014,290,303	93,788,363	230,035,276	904,266,114	4,081,323
2015	361	1,400,214,109	230,632,509	1,135,839,229	89,455,569	92,683,535	1,039,376,820	4,513,320
2016[1/]	363	1,594,099,599	259,189,172	1,284,147,935	62,422,159	38,806,601	1,214,628,313	4,008,307

1/ Tax year 2016 data is preliminary and subject to change.
# of Claimants – the number of taxpayers that claimed the credit in each taxable year.
Total Expenses and Payments – eligible research and development expenses reported by taxpayers on their tax credit form.
New Credit Available – the amount of new tax credits identified in each taxable year.
Total Credit Available– the total tax credits identified in each taxable year, including any new credits and any credits carried over from a previous taxable year and identified in that year.
Credit Used – the amount of credits used to offset tax liability in each taxable year.
Limited Carry Forward – any carry forward established prior to 2003 is limited in the sense that the new credit established plus the carry forward cannot exceed $500,000 per tax year. For example, if the new credit identified in 2002 is $300,000, the carry forward that year is limited to $200,000 since this would bring the total credit to the maximum amount of $500,000.
Unlimited Carry Forward – beginning with tax year 2003, the carry forward amount is not limited in future years.
Amount Refunded – the amount of the refundable credit used in each taxable year.

Corporate Credit

Based on preliminary data provided DOR, 363 corporations claimed the credit in 2016, the last year for which data is available. These corporations claimed a total of $1.6 billion in qualified research and development expenses and payments on their tax credit forms. In TY 2016, the corporate income tax was reduced by $(62.4) million under the nonrefundable credit program and $(4.0) million under the refundable program. Since this data is preliminary, final credit use for TY 2016 is expected to be higher.

Table 2 below provides a history of the corporate R&D credit in terms of claimants, eligible research and development expenses, credit usage, and carry-forward amounts.

R&D Expenses and Payments
According to DOR, 974 taxpayers claimed the R&D credit from TY 1993 through TY 2016. The average length of time these taxpayers claimed the credit is 5 years. Forty-five of the 363 corporate claimants in 2016 have been claiming the credit for 15 years or longer.

A total of $18.6 billion in R&D expenses and payments were claimed between TY 1993 and TY 2016, for an average of $19.1 million per taxpayer. At the height of the high-tech bubble in 2000, corporations claimed a total of $954 million in qualified R&D spending, a level that was not exceeded until 2010. The average annual amount of R&D expenses claimed between TY 2011 and TY 2016 was $1.3 billion.

Credit Carry Forward
As noted previously, any corporation that files for nonrefundable R&D credits is required to make a separate calculation of credit carryovers before and after December 31, 2002. This is the reason that *Table 2* above distinguishes between limited and unlimited carry forward. (Pre-2003 and post-2002 carryovers are referred to as, respectively, limited and unlimited carry forward.) As shown in *Table 2*, the limited carry forward amount totaled $39 million in TY 2016 compared to $1.2 billion for the unlimited carry forward.

There are several reasons for the large build-up of R&D credit carry forwards. First, unused R&D credits can be carried forward up to 15 years compared to 5 years for most other income tax credits. Second, pre-2003 (or limited) carryovers cannot by statute exceed $500,000 per year. This amount is further reduced if new credit is created in the current year. Third, although post-2002 credit carryovers are not capped by statute, the actual amounts claimed remain limited by businesses' tax liability.

The pre-2003 (or limited) credit carryovers have decreased from a high of $541 million in TY 2003 to $39 million in TY 2016. This is due to the 15-year carry forward period under which pre-2003 (limited) credits have either expired or are close to expiring. (The last year limited credit carryovers are allowed is for TY 2017.)

The post-2002 (or unlimited) credit carryovers have increased from $47 million in TY 2003 to $1.2 billion in TY 2016. Although post-2002 credit carryovers are uncapped, taxpayers' ability to use nonrefundable R&D credits remains limited by their income tax liability. According to an analysis prepared by DOR in 2013, most companies that claimed the R&D credit in 2011 used it to fully offset their tax liability. (The analysis indicated that only 19% of the corporations that claimed the R&D credit in 2011 had any liability left after using the credit.) Although DOR has not updated this study, available data suggests that corporations have largely continued to carry forward unused credits after TY 2011. To provide some perspective, credit use increased on average by 2% annually from TY 2011 through TY 2015 (the last year with final data) compared to 14.6% for unlimited credit carry forward. If this trend continues, the large "build-up" of unlimited credit carryovers, coupled with the 15-year carry forward period, suggests that such credits will mostly go unused in future years.

Individual Credit
As noted previously, the nonrefundable R&D credit became available to individual income taxpayers for the first time in TY 2001. Individual tax credit claims are available to partners or owners of "pass-through-entities" such as limited liability companies, partnerships, or Subchapter S corporations. Since this time, the cost of the individual credit has risen from $0.5 million in 2001 to $14.0 million in 2016. According to DOR, a total of 1,713 individual taxpayers have claimed the credit since 2001. The impact of the individual

income tax credit by year is summarized in *Table 3* below. (Data for TY 2017 is preliminary and subject to change.)

Table 3

Research and Development Credit – Individual Credit Claims by Tax Year

Tax Year	# of Claimants	New Credit Available	Total Credit Available	Credit Used	Limited Carry Forward	Unlimited Carry Forward	Amount Refunded
2001	60	$943,502	$943,503	$508,516	$434,986	N/A	
2002	107	1,582,874	1,988,911	817,296	1,171,615	N/A	
2003	136	2,851,821	4,020,038	1,191,528	1,143,176	1,685,334	
2004	166	3,144,479	5,854,701	1,654,410	1,096,963	3,132,257	
2005	200	4,246,231	8,450,439	3,353,388	854,668	4,242,089	
2006	280	5,411,963	10,291,430	4,384,068	$757,727	5,169,635	
2007	281	5,015,292	10,177,930	4,015,871	530,475	5,659,505	
2008	350	6,705,045	12,602,338	5,091,709	427,187	7,111,363	
2009	359	6,023,764	13,219,008	4,808,573	382,810	8,039,185	
2010	491	9,660,491	18,129,979	6,853,437	350,062	10,655,066	103,312
2011	535	10,192,437	21,055,403	7,063,204	273,583	13,100,730	423,709
2012	567	12,891,711	26,348,599	7,935,540	231,251	18,047,793	132,142
2013	638	14,345,536	32,293,485	8,521,967	156,419	23,469,265	152,013
2014	795	16,261,876	39,425,245	10,496,157	156,419	28,665,910	80,069
2015	736	17,574,362	42,101,417	11,419,988	156,254	30,324,363	121,369
2016	832	16,535,062	41,817,915	13,998,795	55,476	27,819,120	349,355
2017[1/]	439	6,944,533	32,449,869	4,666,773	x	27,783,093	148,558

1/ Tax year 2017 data is preliminary and subject to change.
# of Claimants – the number of taxpayers that claimed the credit in each taxable year.
New Credit Available – the amount of new tax credits identified in each taxable year.
Total Credit Available– the total tax credits identified in each taxable year, including any new credits and any credits carried over from a previous taxable year and identified in that year.
Credit Used – the amount of credits used to offset tax liability in each taxable year.
Limited Carry Forward – any carry forward established prior to 2003 is limited in that the new credit established plus the carry forward cannot exceed $500,000 per tax year. For example, if the new credit identified in 2002 is $300,000, the carry forward that year is limited to $200,000 since this would bring the total credit to the maximum amount of $500,000.
Unlimited Carry Forward – beginning with tax year 2003, the carry forward amount is not limited in future years.
Amount Refunded – the amount of the refundable credit used in each taxable year.
x – No data has been publicly released by the Department of Revenue.

Refundable Credits Approved by ACA

The refundable R&D credit is available to companies with fewer than 150 full-time employees. The refund is up to 75% of the excess credit (amount by which the credit exceeds the tax liability). The remaining 25% of the excess credit must be forfeited by the taxpayer. *Table 4* below, which was provided by DOR, shows the total amount of individual and corporate income tax refunds approved by ACA since the inception of the program in 2010. ACA is authorized to approve up to $5.0 million in refundable credits each calendar year.

Table 4

Refundable R&D Credits Approved by the Arizona Commerce Authority

Calendar Year	# of Refunds Approved	Excess Over Liability	Forfeited Credit	Refund
2010	48	$7,051,305	$1,762,826	$5,000,002
2011	72	6,668,494	1,667,124	5,000,000
2012	47	6,992,721	1,748,180	4,999,998
2013	43	6,778,034	1,778,041	5,000,000
2014	45	6,666,672	1,666,672	5,000,000
2015	23	6,644,218	1,714,730	5,000,000
2016	36	6,709,567	1,709,567	5,000,000
2017	44	6,803,179	1,803,179	5,000,000

As shown in the *Table 4* above, ACA has essentially approved the maximum amount of $5.0 million in refundable credits in each year since the credit was established. In February, ACA reported that the maximum allowable amount of $5.0 million for calendar year 2018 had already been reached.

Economic Benefits

Measurable Economic Development
New Investments
Creation of New Jobs or Retention of Existing Jobs

According to economic theory, research produces "positive externalities." This means that the benefits of research accrue not only to the companies that bear the cost of discovering or producing new technology but also to those that are "external" to such R&D spending. Due to this "spillover effect" of benefits, companies may be reluctant to engage in R&D. To correct this type of "market failure," economists may prescribe an R&D tax credit to lower the effective cost of research.

State policymakers also enact R&D credits as an economic development tool intended to entice businesses to locate or expand facilities and employment within their borders. States' success in achieving this objective is not clear. To date, most empirical evaluations of R&D incentives have been for the federal research credit. These empirical studies suggest that the federal R&D credit has induced companies to engage in more research and development than they would have otherwise.

A relatively small number of academic studies of state R&D credits have been conducted and the results of these studies are mixed. For example, a 2005 study from the University of Illinois showed that state R&D incentives generate an additional $75 to $118 of additional R&D spending per capita. Another University of Illinois study conducted in 2008 concluded that the presence of a state R&D program increases the number of high technology establishments in a state by 17 per 1 million of population and increases the proportion of high technology businesses in a state by 0.07%.

While the studies from the University of Illinois suggest that state R&D credits can result in increased R&D spending, other studies have reached different conclusions. For example, a 2007 study by the San Francisco Federal Reserve Bank concluded that state R&D credits do not increase the total level of research spending but merely serve to shift the location of research spending from one state to another. In other words, a company is likely to shift the research spending it was already performing in one state to another state with a more generous tax incentive. For this reason, the study referred to state R&D credits as a "zero-sum game." The result of another study conducted at the University of Southern Mississippi in 2010 suggests that the state R&D credit has been effective in terms of expanding research among already existing companies in the state but not for encouraging startups of new high technology firms.

The impact of the R&D credit on economic development, new investment, and the creation or retention of jobs in Arizona has not been empirically evaluated. An empirical study would require access to individual company-level data on R&D tax credit claims over many years. The state's confidentiality statute precludes the release of such detailed information. Even if such data were available, however, it would be difficult to measure the extent to which the growth in employment and income in the state would be directly attributable to in-state R&D spending as opposed to "technological spillover" from other states.

According to a report issued by the National Science Foundation (NSF) in May 2018 ("National Patterns of R&D Resources: 2015–16 Data Update"), R&D expenditures in Arizona totaled $7.0 billion in 2015, the last year for which such data has been released. The data was compiled from NSF's surveys of the organizations that perform the bulk of research and development (businesses, government, universities, and nonprofit organizations). Arizona's share of R&D spending among all states was 1.50%. NSF's 2015 data showed that Arizona ranked 18th in the nation in terms of total R&D spending and 20th in terms of R&D intensity (R&D spending as a percent of the state gross domestic product). Arizona's R&D spending as a share of its state gross domestic product was 2.41% in 2015, which was below the national average of 2.62%. Annual NSF reports from 2011 to 2015 suggest that Arizona's share of total R&D spending in the nation has gradually declined over this time (from 1.63% in 2011 to 1.50% in 2015). Arizona's R&D ranking among states (in terms of dollars spent on R&D), however, has remained essentially unchanged over this time.

Complexity

The R&D credit is unusually complex in its description, calculation and application. Qualified expenses are defined by federal regulations and not by Arizona law. Even if the R&D expenses have already been calculated for the taxpayers' federal returns, the record-keeping requirements to track expense carry forwards over 15 years may impose a burden. The carry forward provisions also make this credit difficult to administer and verify.

Potential Performance Measures

Performance measures could include:

1. Total research dollars spent in Arizona each year.

2. Number of persons employed in research activities.

3. Total research payrolls.

4. The introduction of new products.

Prior Review

The Research and Development tax credit was last reviewed by the JLITCRC in 2013. The committee recommended at that time that the credit should be amended to enhance performance measures and placed on the review schedule for 2018. However, no legislation was introduced that would have enhanced performance measures.

Pollution Control Equipment Tax Credit

Pollution Control Equipment Tax Credit

Summary

- The cost of the corporate tax credit was $2.5 million in FY 2018. The credit was claimed by 14 taxpayers at an average of $180,900 per claim.
- The cost of the individual tax credit was $100,000 in FY 2017. The credit was claimed by 8 taxpayers at an average of $12,500 per claim. Data for 2018 has not been released due to confidentiality rules.
- The Pollution Control Equipment was created to incentivize the purchase of pollution control and pollution prevention equipment in Arizona.
- The tax credit has been used towards the purchase of approximately $1.3 billion in pollution control equipment since it was created in 1994.

Statute

A.R.S. § 43-1170 (Corporate)
A.R.S. § 43-1081 (Individual)

Description

This credit was last reviewed in 2013. The description of the credit as well as other sections of the credit review have been updated from our 2013 report when relevant.

The Pollution Control Equipment tax credit is provided for purchases of equipment used in the taxpayer's business to control or prevent pollution. To receive the credit, the pollution control equipment must meet or exceed the rules and regulations of the U.S. Environmental Protection Agency, the Arizona Department of Environmental Quality, or a political subdivision. The amount of the credit is 10% of the price of the equipment, up to a maximum credit of $500,000 in a taxable year. This credit is provided against both the corporate and individual income tax.

Refundable

The credit is not refundable.

Carry Forward

The unused portion of the credit may be carried forward for a maximum of 5 consecutive years. A total of $4.5 million in corporate and individual credits was carried forward in tax year 2016.

History and Rationale

The credit was created by Laws 1994, Chapter 117 to provide incentives for Arizona businesses to purchase pollution control or pollution prevention equipment. The credit was also a part of the incentive package requested by Intel for locating a new facility in Arizona, as stated in a 1994 memorandum by the Arizona Association of Industries to the members of the House of Representatives. For tax years 1995 and 1996, the maximum credit was $750,000. Beginning in 1997, the maximum credit was reduced to its current level of $500,000.

Revenue Impact

The Department of Revenue (DOR) began reporting individual and corporate income tax credits on a fiscal year basis in FY 2015 and FY 2016, respectively. As reported by the DOR, the cost of the corporate credit was $1.9 million in FY 2016, $471,700 in FY 2017, and $2.5 million in FY 2018. The cost of the individual credit was $0 in FY 2015, $27,100 in FY 2016, and $100,000 in FY 2017. The DOR has not released FY 2018 data for claims against the individual income tax due to confidentiality concerns.

DOR also reports credit use on tax year basis. This data is available from 1995, when the credit was first established. It should be noted that this data differs from credit use by fiscal year for several reasons, including filing extensions and varied corporate tax years. *Table 1* shows the cost of the corporate tax credit by tax year since the credit's inception in 1995. *Table 2* displays the same information for the individual tax credit.

Table 2

Pollution Control Equipment Credit – Corporate Credit Claims by Tax Year

Tax Year	# of Claimants	Cost of Property	New Credit Available	Total Credit Available	Credit Used	Carry Forward
1995	21	$79,797,815	$5,205,329	$5,205,329	$3,110,818	$2,094,511
1996	29	54,365,441	4,332,277	6,937,066	4,498,473	2,438,593
1997	29	45,276,655	2,138,611	3,989,361	2,202,316	2,046,170
1998	28	74,557,812	4,732,953	9,220,784	4,241,078	4,895,418
1999	37	110,110,242	6,897,324	13,785,777	6,591,096	7,194,681
2000	40	51,034,592	4,454,823	12,345,490	3,860,440	8,485,050
2001	37	61,962,955	3,692,416	9,090,276	2,819,831	6,270,445
2002	31	27,276,116	2,509,488	8,239,252	2,460,289	5,776,562
2003	31	29,540,780	2,670,812	8,654,750	2,464,944	5,835,972
2004	24	29,276,308	2,629,300	7,384,937	1,206,299	5,853,665
2005	24	44,112,593	2,675,516	8,482,008	2,119,047	5,730,493
2006	21	42,962,363	2,466,161	5,959,906	1,997,280	3,805,825
2007	17	61,630,546	2,625,317	4,680,154	2,304,062	2,279,572
2008	18	267,435,142	3,130,410	5,409,982	1,418,256	3,981,691
2009	17	78,258,644	2,988,800	6,630,139	1,956,688	4,260,463
2010	20	84,498,144	3,302,027	7,562,350	2,617,517	4,422,930
2011	17	30,320,781	2,238,448	6,585,467	1,364,968	4,685,641
2012	20	36,517,032	2,594,574	7,075,245	1,872,337	5,018,998
2013	20	30,787,236	2,362,264	7,381,262	1,714,164	5,167,287
2014	15	27,580,176	2,229,198	7,370,693	1,414,664	5,704,478
2015	14	12,738,152	1,273,816	6,978,294	1,058,352	5,366,939
2016[1/]	16	22,736,796	1,633,123	6,995,950	1,616,244	4,467,531

1/ Tax year 2016 data is preliminary and subject to change.
# of Claimants - The number of taxpayers who claimed the credit in each year.
Cost of Property - The total dollar value of equipment purchased that qualifies for the credit.
New Credit Available - The amount of new tax credits identified in each year.
Total Credit Available - The total tax credits identified in each tax year, including any new credits and any credits carried over from a previous year and identified in that year.
Credit Used - The total value of credits claimed in each year.
Carry Forward - The total credit identified but not used in each year. The full carry forward may not be reflected in the following year's estimate. For example, a corporation could have $500 in credit identified in tax year 2008, use $400 of it in 2008 (leaving $100 as a carry forward). If the corporation did not identify or claim that credit in 2009, that $100 carry forward could not be included in the carry forward total for 2009.

Table 2

Pollution Control Equipment Credit
Individual Credit Claims by Tax Year

Tax Year	# of Claimants	Total Credit Available	Credit Used	Carry Forward
1995	0	$0	$0	$0
1996	0	0	0	0
1997	1	x	x	x
1998	5	x	x	x
1999	6	x	x	x
2000	4	x	x	x
2001	18	31,624	31,624	0
2002	13	18,562	18,525	37
2003	9	32,062	31,239	823
2004	28	40,676	16,385	24,291
2005	23	79,082	71,574	7,508
2006	14	31,327	14,412	16,860
2007	10	30,247	7,962	22,767
2008	5	18,492	5,731	12,756
2009	2	x	x	x
2010	3	5,844	2,466	2,661
2011	5	x	x	x
2012	9	221,039	221,039	0
2013	1	x	x	x
2014	4	x	x	x
2015	7	122,247	29,041	93,206
2016	8	135,451	99,666	35,725
2017	2	x	x	x

# of Claimants - The number of taxpayers who claimed the credit in each year.
Total Credit Available - The total tax credits identified in each tax year, including any new credits and any credits carried over from a previous year and identified in that year.
Credit Used - The total value of credits claimed in each year.
Carry Forward - The total credit identified but not used in each year. The full carry forward may not be reflected in the following year's estimate. For example, an individual could have $500 in credit identified in tax year 2008, use $400 of it in 2008 (leaving $100 as a carry forward). If that individual did not identify or claim that credit in 2009, that $100 carry forward could not be included in the carry forward total for 2009.
x - No data has been publicly released by the Department of Revenue.

Economic Benefits

Measurable Economic Development
New Investments
Creation of New Jobs or Retention of Existing Jobs

Thus far there have been no studies that attempt to measure the economic development or job creation and retention related to this tax credit. Since the creation of the credit in 1994, DOR has reported that 114 corporate taxpayers have used the credit towards the purchase of approximately $1.3 billion worth of pollution control equipment. It is difficult to know, however, how much of this investment occurred due to the tax credit. To some extent, the credit enhances Arizona's competitiveness relative to other states by lessening tax burden for some businesses.

Complexity

The application form and the administration of the credit are relatively simple. However, it can be difficult for DOR to verify that equipment purchased by taxpayers qualifies for the pollution control tax credit, since this determination requires a certain level of scientific knowledge that DOR's auditors may not possess.

Potential Performance Measures

Performance measures could include:

1. Type of equipment purchased and its related environmental impact.
2. Increase in pollution control equipment purchases relative to states that do not offer similar credits.

Prior Review

The Pollution Control Equipment tax credit was last reviewed by the JLITCRC in 2013. The Committee recommended that the credit be amended to enhance performance measures and placed back on the income tax credit review schedule for 2018. No legislation was introduced to meet the committee's recommendation.

Taxes Paid for Coal Consumed in Generating Electric Power Credit

Coal Consumption Corporate Income Tax Credit

Summary

- The cost of the credit was $1,415,200 in FY 2018.
- The credit was claimed by 4 corporate income taxpayers in FY 2018 at an average of $353,800 per claim.
- The credit had a carry forward of $6,547,300 in TY 2016, the last year for which this data is available.
- This credit can be claimed by corporate taxpayers for the Transaction Privilege Tax (TPT) or use tax paid on coal purchased and consumed in generating electricity in Arizona.
- Laws 2018, Chapter 263 conditionally exempts purchased coal from state and municipal TPT. Chapter 263 becomes effective only if the Navajo Generating Station is transferred to new ownership by December 31, 2022.
- If the new exemption becomes effective, the TPT exemption will reduce the dollar value of the corporate income tax credit.

Statute

A.R.S. 43-1178

Description

The credit was last reviewed in 2013. The description of the credit as well as other sections of the credit review have been updated from our 2013 report when relevant.

An income tax credit is allowed for taxpayer purchases of coal consumed in generating electricity in Arizona. The credit is equal to 30% of the amounts paid as both state and local transaction privilege and use tax with respect to the coal sold to the taxpayer. Corporations are allowed to deduct these state and local tax payments from their federal taxable income, which is the starting point for the calculation of Arizona taxable income. The tax credit is in lieu of this deduction. An addition to Arizona gross income is therefore required for the amount of the Arizona TPT and use taxes included in the computation of federal taxable income for which the state tax credit is claimed. The credit is only available to corporate taxpayers.

Refundable

The credit is not refundable.

Carry Forward

The tax credit may be carried forward for 5 taxable years. A total amount of $6,547,300 in corporate income tax credits was carried forward in Tax Year 2016.

History and Rationale

The credit was added by Laws 1998, Chapter 137 and applies retroactively to taxable years beginning January 1, 1998. The bill was introduced in order to encourage the state's electric power plants to purchase coal in Arizona and provide an incentive to take delivery in Arizona of coal from sources outside the state.

Coal purchased in Arizona is subject to a 3.125% Transaction Privilege Tax (TPT). The state TPT collection on coal purchases is subject to the distribution formula that allocates a portion of revenue collected to counties and cities within the state. The amount distributed to each county is determined by a formula that is based on each county's share of statewide population, property tax values, and point of sales. In addition to the state TPT, each county within the state imposes an excise tax, which is generally based on 10% of the state rate. For example, in Apache and Navajo Counties, the tax rate on coal purchases is 3.4375% (3.125 + 0.3125).

Coal purchased outside of Arizona is subject to a 5.6% state use tax and virtually all use tax revenue is retained by the state. Numerous cities, including Phoenix and Tucson, also impose a use tax on coal purchased from outside their boundaries. If the purchaser pays a sales tax to another state on the purchase of coal, the tax paid can be credited against the purchaser's Arizona use tax liability.

The rationale for establishing the incentive as an income tax credit, rather than a sales tax credit, is to allow the county to retain its TPT revenue. The company that purchases coal in Arizona will pay a TPT to the state and, if applicable, an excise tax to the county. The total tax liability (TPT and income tax combined) to the company is reduced by the income tax credit.

Laws 2018, Chapter 263 exempts the purchase of coal from state and municipal TPT. In addition, Chapter 263 imposes a 0.5% county excise tax on the sale of coal that has been mined or extracted within the county boundaries. However, this law becomes effective only if the Navajo Nation approves the transfer of ownership of the Navajo Generating Station to a separate entity by December 31, 2022. In the event that Chapter 263 becomes effective, state and municipal TPT would no longer be levied on the sale of coal, thus reducing the amount of the credit claimed. There is insufficient public information, however, to estimate this impact.

Revenue Impact

Beginning in FY 2016, the Department of Revenue (DOR) is required to report corporate income tax credit use on a fiscal year basis. However, DOR was not able to report on this credits usage in FY 2016 due to confidentiality restrictions. As reported by DOR, the cost of the credit was $642,800 in FY 2017, and $1,415,200 in FY 2018.

DOR also reports credit use on a <u>tax year</u> basis. This data is available from when the credit was first established. It should be noted that this data differs from credit use by fiscal year for several reasons, including the filing of extended and amended tax returns. *Table 1* shows the cost of the corporate tax credit by tax year since the credit's inception.

Table 1

Coal Consumption Corporate Income Tax - Credit Claims by Tax Year

Tax Year	# of claimants	TPT or Use Tax paid	New credit Available	Total credit Available	Credit Used	Carry Forward
1998	4	$3,053,275	$915,983	$915,983	$678,039	$237,944
1999	4	3,607,134	1,067,569	1,305,513	803,476	502,037
2000	3	3,716,675	1,115,002	1,617,039	778,015	839,024
2001	3	6,388,155	1,916,447	2,755,471	1,556,016	1,199,455
2002	3	5,417,396	1,865,219	3,064,674	1,504,851	1,559,823
2003	3	5,285,068	1,585,520	3,145,343	1,229,020	1,744,443
2004	3	4,312,193	1,293,658	3,038,101	908,990	1,799,204
2005	3	4,175,437	1,252,631	3,051,835	843,909	1,870,939
2006	3	4,581,990	1,374,597	3,245,536	929,098	1,956,007
2007	4	6,639,107	1,991,733	3,947,740	1,052,556	2,534,816
2008	4	x	x	x	x	x
2009	4	6,474,053	1,943,116	6,301,508	658,252	5,286,784
2010	4	6,738,031	2,021,409	7,308,193	2,182,237	4,782,371
2011	4	x	x	x	x	x
2012	4	x	x	x	x	x
2013	4	x	x	x	x	x
2014	4	x	x	x	x	x
2015	4	6,112,730	$1,833,819	9,022,346	642,803	7,494,682
2016[1/]	4	5,279,910	$1,583,973	9,078,655	1,415,191	6,547,313

1/ Tax year 2016 data is preliminary and subject to change.
# of Claimants - The number of taxpayers who claimed the credit in each year.
TPT or Use Tax Paid - The total dollar value of sales and use taxes paid for coal consumed to generate electrical power in Arizona.
New Credit Available - The amount of new tax credits identified in each year.
Total Credit Available - The total tax credits identified in each tax year, including any new credits and any credits carried over from a previous year and identified in that year.
Credit Used - The total value of credits claimed in each year.
Carry Forward - The total credit identified but not used in each year. The full carry forward may not be reflected in the following year's estimate. For example, a corporation could have $500 in credit identified in tax year 2008, use $400 of it in 2008 (leaving $100 as a carry forward). If the corporation did not identify or claim that credit in 2009, that $100 carry forward could not be included in the carry forward total for 2009.
x - No data has been publicly released by the Department of Revenue.

According to DOR, since the law was passed, 6 corporations have used this tax credit.

Economic Benefits

To the extent that coal purchases have shifted from other states to Arizona, some of the lost corporate income tax revenue would be offset by increased sales and use tax revenue.

Measurable Economic Development
New Investments
Creation of New Jobs or Retention of Existing Jobs

The impact of the coal consumption tax credit on economic development, new investments, or jobs created or retained in the state of Arizona is not known. However, by enhancing revenue in counties where coal purchases are made, the counties are able to maintain or improve their tax base.

Other

Coal consumption companies typically negotiate long-term contracts to ensure supplies and control price risks. Elimination of the tax credit would increase the cost of the coal used and could lead these companies to seek cheaper alternatives, if available, when the existing supply contracts expire.

Complexity

This tax credit appears to be relatively easy to administer.

Potential Performance Measures

Performance measures could include:

1. Estimates by the affected counties of the credit's net fiscal impact on their budgets.

2. Annual estimates and the dollar value of coal purchased for electrical generation in Arizona.

Prior Review

The Coal Consumption tax credit was previously reviewed during the 2013 review cycle. The Committee recommended that the credit be amended to enhance performance measures and placed back on the income tax credit review schedule for 2018. No legislation was introduced to meet the committee's recommendation.