Joint Legislative Budget Committee
Staff Memorandum

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DATE: December 12, 2023

TO: Senator J.D. Mesnard, Chairman, Senate Finance Committee
Representative Neal Carter, Chairman, House Ways and Means Committee

FROM: Hans Olofsson, Chief Economist

SUBJECT: 2023 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. § 43-221. At this time, a committee meeting has not been scheduled. 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 2023 review schedule.

Apart from the background information discussed below, the Department of Revenue (DOR) also provides certain statistical information that they deem to be confidential, such as the number of credit claimants and the dollar value of credits used. However, since the credit use, as it pertains to this information provided by DOR has been miniscule in recent years, it is not included in this document.

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 2023, which are listed below.

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.

Each of the credits listed above was included on the 2018 review schedule.

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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.

A.R.S. § 43-223 requires any new credit to include a clause that explains the rationale and objective of the credit. 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.

2023 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 can 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 by fiscal year on the number of claims and the amount of credit used. In addition, the review includes similar information by 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.

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: Fletcher Montzingo, Director of Fiscal Policy, Senate
Sean Laux, Senior Policy Advisor, Senate
Molly Graver, Deputy Director of Senate Research and Analyst of Senate Finance Committee
Sean McCarthy, Senior Policy Advisor, House
Nicole Lovato, Policy Advisor, House
Vince Perez, Senior Research Analyst, House Ways and Means Committee

Research and Development Tax Credit

Research and Development Tax Credit

Summary

- The cost of the corporate tax credit program was $127.0 million in FY 2023. This includes $115.8 million in *nonrefundable* credits and $11.2 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 $24.6 million in FY 2023.
- 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 a carryforward balance of $1.5 billion in Tax Year (TY) 2021. Corporations may have insufficient tax liability, however, to ever claim most of the carryforward credits.
- The individual credit had a carryforward balance of $33.8 million in TY 2022.

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 2018. The description of the credit as well as other sections of the credit review have been updated from our 2018 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 10 or 15 years, depending on when the credit was initially earned. 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. The last year limited credit carryovers could be used to offset tax liability was for TY 2016.

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 their 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. Laws 2020, Chapter 7 further extended these credit percentages through TY 2030 for corporations; Laws 2021, Chapter 196 made the same extension for the individual credit. Beginning in TY 2031, 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 - 2030	24% of amount up to $600,000	$600,000 plus 15% of amount exceeding $2.5 million.
2031 -	20% of amount up to $500,000	$500,000 plus 11% of amount exceeding $2.5 million.

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.

Laws 2021, Chapter 196 altered the credit so that credits claimed beginning in TY 2022 have a 10-year carry forward instead of 15 years. Credits claimed prior to TY 2022 retained their 15-year carry forward.

Laws 2021, Chapter 436 allowed for certain classes of income to be taxed at alternate rates from the individual income tax rates, beginning in TY 2021. These classes of income are referred to in statute as Arizona "small business income" (SBI). This law also allows individual income tax credits to be claimed against the Arizona SBI tax to the extent that the credit is derived from income otherwise classified as SBI.

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 36 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.

Based on data provided by DOR, the combined cost of the corporate R&D (nonrefundable and refundable) credit program increased from $46.3 million in FY 2019 to $127.0 million in FY 2023. 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 increased from $18.2 million in FY 2019 to $24.6 million in FY 2023. As shown in *Table 1*,

the total cost of all R&D credits for which DOR has released data increased from $64.9 million in FY 2019 to $151.7 million in FY 2023.

Table 1

Type of Credit	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Individual - Nonrefundable	$17,657,409	$20,450,924	$22,613,878	$24,357,337 1/	$24,138,785
Corporate - Nonrefundable	44,071,940	72,548,121	76,784,165	79,909,796	115,798,309
Individual - Refundable	599,428	455,719	477,096	1,013,158	516,276
Corporate - Refundable	2,316,130	3,602,055	2,641,479	3,981,203	11,207,354
Individual – University Research	0	0	0	0	0
Corporate – University Research	Not Releasable	Not Releasable	Not Releasable	Not Releasable	Not Releasable
Total 2/3/	$64,644,907	97,056,819	102,516,618	109,261,494	151,660,724

1/ Total includes both individual and "Arizona Small Business Income" Research and Development credit claims. Total amount excludes data that was either not available or releasable.
2/ Total amount excludes data that was either not available or releasable.
3/ For information on the cost of the credit from FY 2015 to FY 2018, see the 2018 Income Tax Credit Review published on the JLBC website.

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.

Corporate Credit

Based on preliminary data provided DOR, 471 corporations claimed the credit in 2021, the last year for which data is available. These corporations claimed a total of $1.5 billion in qualified research and development expenses and payments on their tax credit forms. Since this data is preliminary, final credit use for TY 2021 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 carryforward amounts.

R&D Expenses and Payments

A total of $28 billion in R&D expenses and payments were claimed between TY 1993 and TY 2021, for an average annual R&D expense of $965 million over 29 years. 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 2016 and TY 2020 was $1.8 billion.

Credit Carry Forward

As noted previously, any corporation that filed for nonrefundable R&D credits prior to TY 2017 was required to make a separate calculation of credit carryovers established before and after December 31, 2002. This is the reason that *Table 2* below 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*, limited carry forward was allowed only through TY 2016. In TY 2020, there was $1.8 billion in unlimited carry forward.

There are several reasons for the large build-up of R&D credit carry forwards. First, unused R&D credits claimed before TY 2022 can be carried forward up to 15 years while unused credits claimed in TY 2022 or afterward can be carried forward 10 years. Most other income tax credits can only be carried forward 5 years. Second, although post-2002 credit carryovers are not capped by statute, the actual amounts claimed remain limited by businesses' tax liability.

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 2/	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	219	738,185,705	95,266,863	136,226,498	37,564,377	537,779,321	106,124,164	
2005	228	831,775,937	106,832,183	221,871,152	49,151,017	533,793,348	163,566,267	
2006	253	912,443,493	116,887,831	285,616,103	56,597,026	518,174,192	224,011,148	
2007	256	874,590,774	113,276,862	339,450,273	58,058,182	507,262,566	277,174,522	
2008	268	817,738,634	105,850,824	382,835,851	49,922,335	500,132,739	329,859,533	
2009	281	937,463,123	121,457,949	456,562,495	32,811,148	483,964,510	420,726,270	
2010	318	985,430,142	147,001,480	566,371,487	59,893,231	470,060,499	498,624,880	4,015,985
2011	346	1,150,270,546	191,531,443	691,595,427	84,418,019	420,382,688	600,063,391	3,939,816
2012	364	1,215,789,273	202,054,919	804,194,882	83,873,410	384,419,027	712,283,751	4,184,353
2013	357	1,217,689,413	202,860,395	895,538,784	92,952,561	312,963,882	793,367,662	4,555,687
2014	363	1,260,799,672	209,926,589	1,051,692,081	91,971,879	229,898,885	953,559,246	4,081,323
2015	388	1,450,187,894	240,420,262	1,193,085,710	90,688,681	92,634,072	1,095,186,345	4,513,320
2016	400	1,668,711,573	274,125,366	1,304,363,579	67,176,438	39,012,285	1,229,572,431	4,094,460
2017	409	1,753,526,558	289,404,303	1,507,820,736	35,683,460	N/A	1,465,256,097	4,539,811
2018	449	2,021,639,164	330,474,120	1,781,284,076	75,474,234	N/A	1,668,944,386	3,710,434
2019	461	2,349,235,469	382,276,984	2,028,694,807	76,420,671	N/A	1,906,110,127	3,328,938
2020	460	1,570,591,019	392,159,223	2,242,535,501	90,645,981	N/A	2,113,389,475	3,300,368
2021 1/	471	1,508,641,161	250,807,734	1,622,378,621	67,392,795	N/A	1,515,687,974	3,510,130

1/ Tax year 2020 and Tax Year 2021 data are preliminary and subject to change.
2/ The last year limited credit carryovers are allowed is for TY 2016.
# 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.

The pre-2003 (or limited) corporate credit carryovers decreased from a high of $541 million in TY 2003 to a low of $39 million in TY 2016. As noted above, TY 2016 was the last year for which the limited credit carried forward could be claimed.

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 use of the individual credit has risen from $0.5 million in 2001 to its peak of $26.3 million in 2020. According to DOR, a total of 2,988 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 2022 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 3/	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	882	16,955,346	44,615,124	14,463,496	55,476	29,703,484	349,355
2017	972	20,829,188	53,804,582	17,107,786	N/A	36,186,866	387,419
2018	1,019	23,926,891	62,661,643	21,322,073	N/A	40,566,986	579,438
2019	1,067	25,026,641	67,724,542	21,528,245	N/A	45,521,354	506,205
2020	1,139	22,869,810	69,260,279	26,303,456	N/A	41,980,391	732,323
2021 1/	926	25,196,986	64,804,083	17,989,490	N/A	45,305,699	174,050
2022 2/	791	17,495,060	68,976,564	16,486,754	N/A	33,828,732	91,224

1/ Beginning in Tax Year 2021, totals include individual income tax and Small Business Income (SBI) tax credit claims.
2/ Tax year 2022 data is preliminary and subject to change.
3/ The last year limited credit carryovers are allowed is for Tax Year 2016.
# 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.

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
2018	73	9,409,394	4,429,111	4,980,283
2019	75	8,374,911	3,374,911	5,000,000
2020	75	6,764,194	1,764,197	4,999,997
2021	81	6,127,521	1,531,879	4,595,642

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 January, ACA reported that the maximum allowable amount of $5.0 million for calendar year 2023 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. The National Bureau for Economic Research (NBER) found in a 2019 study that state-level R&D credits increase entrepreneurial activity by an average of about 7%. The study also found that R&D credits incentivize new firm formation more effectively than state-level investment credits.

Another study from Arizona State University (ASU) shows evidence that R&D credits are associated with greater mobility of skilled labor across state lines and higher levels of innovation.

While the studies from NBER and ASU suggest that state R&D credits can result in increased R&D spending, other studies have reached different conclusions. The Iowa Department of Revenue performed a study in 2021, which concluded that states with R&D credits generally have greater levels of research and economic activity. However, once other significant factors are controlled for (such as demographics and other state policies), these credits do not seem to raise research levels. Maryland's Department of Legislative Services, upon evaluating their state's R&D credit, stated that there is no evidence the Maryland R&D credit is effective at increasing innovation and economic growth. That study attributes the credit's lack of effectiveness to the particular way that the Maryland credit was designed and implemented. The ASU study found that state R&D tax credits often negatively affect states' short-term fiscal health, but in the long run may indirectly contribute to greater tax revenue.

According to a report issued by the National Science Foundation (NSF) in January 2023 ("National Patterns of R&D Resources: 2020–21 Data Update"), R&D expenditures in Arizona totaled $9.1 billion in 2020, 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 1.27%. NSF's 2020 data showed that Arizona ranked 21st in the nation in terms of total R&D spending and 26th 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 2.37% in 2020, which was below the national average of 3.40%. Annual NSF reports from 2011 to 2020 suggest that Arizona's share of total R&D spending in the nation has gradually declined over this time (from 1.50% in 2015 to 1.27% in 2020). Arizona's R&D ranking among states (in terms of dollars spent on R&D) has declined from 18th in 2015 to 21st in 2020.

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 10 to 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 2018. However, since the Joint Legislative Income Tax Credit Review Committee did not meet that year, no recommendations were made by the committee.

Pollution Control Equipment Tax Credit

Pollution Control Equipment Tax Credit

Summary

- The cost of the corporate tax credit was $1,324,967 in FY 2023. The credit was claimed by 8 taxpayers at an average of $165,621 per claim.
- The individual tax credit is no longer available as it was repealed by Laws 2022, Chapter 235.
- 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 $1.5 billion in pollution control equipment since it was created in 1994.

Statute

A.R.S. § 43-1170 (Corporate)

Description

This credit was last reviewed in 2018. The description of the credit as well as other sections of the credit review have been updated from our 2018 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. As of January 1, 2022, the credit is only available to corporate income taxpayers.

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. The total amount unused corporate credits carried forward into Tax Year (TY) 2020 was $2.4 million.

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.

Laws 2022, Chapter 235 repealed the individual credit after TY 2021.

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. *Table 1* below shows the cost of the corporate credit by fiscal year going back to FY 2016. The number of credit claims as well as the amounts used to offset corporate tax liability have trended down since FY 2019.

Table 1

Corporate Income Tax Credit Use by Fiscal Year

Fiscal Year	# of Claims	Credit Used
2016	14	$1,850,327
2017	13	$471,669
2018	14	$2,532,330
2019	16	$2,657,926
2020	9	$1,095,504
2021	7	$1,353,931
2022	6	$849,055
2023	8	$1,324,967

# of Claimants - the number of taxpayers who claimed the credit each year

Credit Used - the total amount of credits used to reduce tax revenue each fiscal year

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 filling of extended and amended tax returns and time periods that do not fully overlap. *Table 2* shows use of the corporate tax credit by tax year since the credit's inception in 1995.

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	59,439,350	2,729,198	7,870,693	1,481,996	6,137,146
2015	14	32,526,082	1,773,816	7,910,962	1,481,363	5,876,596
2016	16	62,484,263	2,133,123	8,005,607	2,390,645	4,693,192
2017	10	29,600,398	1,244,967	5,212,548	1,876,118	2,724,292
2018	7	17,593,618	1,300,992	3,700,346	1,105,049	2,287,800
2019	8	20,918,731	1,849,957	4,137,757	1,353,981	2,339,497
2020 1/	7	13,178,099	1,088,944	2,318,223	849,105	1,199,554
2021 1/	6	16,492,640	1,649,264	4,018,978	1,434,834	2,417,884

1/ Tax year 2020 and Tax Year 2021 data are 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.

Economic Benefits

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

To date, there have been no studies that attempt to measure the economic development or job creation and retention related to this tax credit. Since the inception of the credit in 1995, DOR has reported that 121 corporate taxpayers have used the credit towards the purchase of approximately $1.5 billion worth of pollution control equipment. It is difficult to know, however, how much of this investment was directly attributable 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.

Prior Review

The Research and Development tax credit was last reviewed by the JLITCRC in 2018. However, since the Joint Legislative Income Tax Credit Review Committee did not meet that year, no recommendations were made by the committee.

Taxes Paid for Coal Consumed in Generating Electric Power Credit

Coal Consumption Corporate Income Tax Credit

Summary

- The cost of the credit was $1,094,641 in FY 2021, the last year for which use of this credit has been publicly released by the Department of Revenue.
- The credit was claimed by 4 corporate income taxpayers in FY 2021 at an average of $273,660 per claim.
- The credit had a carry forward of $6,104,334 in TY 2019, 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.

Statute

A.R.S. 43-1178

Description

The credit was last reviewed in 2018. The description of the credit as well as other sections of the credit review have been updated from our 2018 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 $6,104,334 in corporate income tax credits was carried forward in Tax Year (TY) 2019.

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 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 a statutory distribution formula that allocates a portion of the state revenue to counties and cities. 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, most counties within the state impose an excise tax, which is generally based on 10% of the state rate. For example, in Apache and Navajo Counties, the total tax rate on coal purchases is 3.4375% (= 3.125% state TPT + 0.3125% county excise tax).

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.

Conditional upon the approval of the transfer of ownership of the Navajo Generating Station (NGS) by the Navajo Nation Council on or before February 1, 2023, Laws 2018, Chapter 263 would have exempted the sale of coal from the state and municipal TPT and imposed a 0.5% county excise tax on the sale of coal that had been mined or extracted within the county boundaries. However, no transfer of ownership occurred and NGS was officially closed (decommissioned) on November 18, 2019. For this reason, the TPT exemption under Laws 2018, Chapter 263 was never implemented.

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. *Table 1* below shows the cost of the credit by fiscal year.

Table 1

Income Tax Credit Use by Fiscal Year

Fiscal Year	# of Claims	Credit Used
2016	x	x
2017	4	$642,803
2018	4	$1,415,191
2019	x	x
2020	4	$1,028,355
2021	4	$1,094,641
2022	x	x
2023	x	x

# of Claimants - the number of taxpayers who claimed the credit each year
Credit Used - the total amount of credits used to reduce tax revenue each fiscal year
x - No data has been publicly released by the Department of Revenue

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 may differ from credit use by fiscal year for several reasons, including the filling of extended and amended tax returns and time periods that do not fully overlap. *Table 2* shows use of the credit by tax year since the credit's inception in 1998.

Table 2

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	4	5,279,910	1,583,973	9,078,655	1,415,191	6,547,313
2017	4	x	x	x	x	x
2018	4	6,956,611	2,086,981	8,202,055	1,028,355	6,036,441
2019	4	7,408,925	2,222,677	8,259,118	1,094,641	6,104,334
2020 1/	2	x	x	x	x	x
2021 1/	2	x	x	x	x	x

1/ Tax year 2020 and Tax Year 2021 data are 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 of the dollar value of coal purchased for electrical generation in Arizona.

Prior Review

The Coal Consumption Tax Credit was last reviewed by the JLITCRC in 2018. However, since the Joint Legislative Income Tax Credit Review Committee did not meet that year, no recommendations were made by the committee.