



**Report on
Hawai‘i Tax Credit for Research
Activities
for Tax Year 2023**

August 2024

Department of Business, Economic Development and Tourism

State of Hawai‘i



STATE OF HAWAII • DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM



This report fulfills the reporting requirements of Section 235-110.91, Hawai‘i Revised Statutes (Act 261, Session Laws of Hawai‘i 2019) and was prepared by the Research and Economic Analysis Division headed by Dr. Eugene Tian, Division Administrator. The report was prepared by Dr. Yang-Seon Kim, Research and Statistics Officer.

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Executive Summary

- This report fulfills the reporting requirements of Section 235-110.91, Hawai‘i Revised Statutes (Act 261, Session Laws of Hawai‘i 2019). The purpose of this report is to provide a summary of characteristics and activities of the Qualified High Technology Businesses (QHTBs) that applied for the Hawai‘i tax credit for research activities for the tax year 2023. It provides statistics for two groups of QHTBs: all QHTBs that applied for the credit and a subset of the QHTBs of which credits were certified.

Research activities and tax credit certification

- A total of thirty-two QHTBs applied for the Hawai‘i state research activity tax credit for the 2023 tax year, and all except one submitted the DBEDT survey of their business activities, that is required to complete the qualification. DBEDT issued certificates to eleven QHTBs on a first-come, first-served basis.
- A combined total of \$63.5 million was spent on qualified research activities in Hawai‘i by the thirty-two QHTB. In accordance with the Act 261, 20% of the qualified research expense, \$12.7 million, was claimed for the state tax credit, but \$5 million was certified due to the annual cap on the tax credit. The \$5 million of certified tax credit is 39.4% of total tax credit claimed for the tax year 2023.
- The amount of credit each individual QHTB claimed varied significantly by company, ranging from less than \$10,000 to over \$2 million. The largest amount of credit certified for a QHTB this year was \$1.54 million.
- Of the thirty-one QHTBs that completed the DBEDT survey, four QHTBs reported that the full or partial amount of their research expense was funded by out-of-state sources. In aggregate, the portion of research expenses funded by out-of-state sources was small at 1.8% of total research expenses.
- The majority of the qualified research expenses was spent for wage payment. In aggregate, about three quarters of the research expense incurred in Hawai‘i in 2023 was paid for wages. At individual QHTBs, more than ten QHTBs reported that their entire research expense was wage payments.
- Among all QHTBs who applied for the credit, ‘Computer software’ was the most common research area where ten QHTBs conducted research. As for the eleven certified QHTBs, their research was spread relatively evenly over all areas rather than showing a concentration on certain areas.

QHTB's economic activities and economic impacts

- The thirty-one QHTBs that completed the DBEDT survey generated a total of \$275.8 million revenue from all goods and services produced in Hawai'i , and spent almost the same amount, \$273.6 million, as operating cost. That was \$8.9 million revenue and \$8.8 million operating cost per QHTB on average.
- A total of 1,104 employees were working in regular positions at the thirty-one QHTBs, as of December 12, 2023. Most of them, 93.7%, were full-time employees. Since the condition to be a QHTB is to conduct more than 50% of its activities in qualified research, the proportion of research jobs was high at the QHTBs. About three in four regular employees were employed for research activities at the QHTBs.
- The role of a tax credit for research activities is to lower the cost of qualified research, which is expected to encourage companies to increase their research investment. To the question asking the impact of the state tax credit on their research decision, 38.8% of all tax credit applicants and 27.3% of the certified QHTBs answered that they would have made no or significantly lesser amount of research spending without the state credit. On the other hand, fourteen QHTBs, 45.2% of all tax credit applicants answered that they would have made almost the same amount of research spending.

Characteristics of QHTBs

- The number of regular employees at each QHTB ranged as small as zero to greater than 170. Over 30% of the QHTBs were small sized with ten or less employees. On the contrary, three QHTBs had more than one hundred employees, as of December 12, 2023.
- There was no clear indication of positive impacts of the research tax credit on job creation in the high-tech companies in Hawai'i. At the individual company level, the job performance was mixed. While nine QHTBs experienced an increase in research jobs, there were thirteen QHTBs with no change and nine QHTBs that experienced a decrease in research jobs.
- Over a third of regular full-time employees at the QHTB were paid at least \$100,000 annually with an average annual wage, weighted by the number of full-time employees at each QHTB, at \$96,864.
- The vast majority of the employees working at the QHTBs were Hawai'i residents. Ten QHTBs reported that there were some non-Hawai'i residents among their employees, either full-time or part-time. However, the combined share of non-resident employees among total 1,104 regular employees at the QHTBs was low at 6.3%. No significant or systematic differences were observed in their average annual wages for resident and non-resident employees.

- A total of 238 patents were owned or pending as of December 31, 2023, by the thirty-one QHTBs that submitted the DBEDT survey. About half of the QHTBs didn't own even a single patent originated in Hawai'i .
- Consistent with the fact that about half of the QHTBs owned no patent yet, the reliance of the QHTB's revenues on intellectual property-based sales was not high. In aggregate, 25.7% of the total revenue earned by the twenty-seven QHTBs with positive revenue in 2023 were from the intellectual property-based sales.
- Many QHTBs that applied for this year's tax credit had a long history of doing their research. About 30% of all tax credit applicants and almost 50% of the eleven certified QHTBs have been doing the research for more than 20 years
- About half of the QHTBs have been applying for the state research activity tax credit even before the new version of the credit started in 2020. About a quarter of the applicants began to apply for this tax credit only after the base for the calculation of tax credit changed from incremental amount to total research amount and another quarter applied for the state tax credit for the first time this year.
- QHTBs were either highly dependent on out-of-state sales for their revenue or not dependent at all with not many companies in between. In aggregate, 26.5% of the total revenue earned by the twenty-seven QHTBs with positive revenue in 2023 came from out-of-state sales.

Table S1. Summary statistics on the characteristics and activities of QHTBs

	All QHTBs	Certified QHTBs
Number of QHTBs	32 ¹	11 ²
% of QHTBs with a Hawai‘i business address	78%	82%
Research		
Research expenses incurred in Hawai‘i (aggregate)	\$63.5M	\$31.1M
Per QHTB	\$2.0M	\$2.8M
% funded from out-of-state sources	1.8%	3.5%
Tax credit claimed (aggregate)	\$12.7M	\$6.2M
Per QHTB	\$0.40M	\$0.56M
-QHTBs with credit “Under \$100K”	35.5%	36.4%
-QHTBs with credit “\$100K-\$500K”	41.9%	36.4%
-QHTBs with credit “\$500K-\$1M”	9.7%	0.0%
-QHTBs with credit “\$1M or over”	12.9%	27.3%
Tax credit certified (aggregate)	\$5M	\$5M
Patents (owned or filed as of 12/31/2023)		
-QHTBs with “0” patent	58.1%	45.5%
-QHTBs with “1-10” patents	22.6%	36.4%
-QHTBs with “over 10” patents	19.4%	18.2%
Revenue/Expense		
Revenue (aggregate)	\$275.8M	\$62.9M
Per QHTB	\$8.9M	\$5.7M
% of revenue from out of state sales	26.5%	6.5%
% of revenue from intellectual properties	25.7%	10.0%
Operation expenses (aggregate)	\$273.6M	\$86.6M
Capital expenditure (aggregate)	\$9.2M	\$0.9M
Employment ³		
Number of employees (aggregate)	1,104	526
Per QHTB	35.6	47.8
Research jobs as % of total jobs	70.5%	86.3%
Change in research jobs from 2022		
-QHTBS with job “Increase”	29.0%	54.5%
-QHTBS with job “No change”	41.9%	27.3%
-QHTBS with job “Decrease”	29.0%	18.2%
Avg. annual wage of full-time employee		
Weighted average of QHTBs ⁴	\$96,864	\$93,645
-QHTBs with avg. wage “Under \$75K”	16.1%	27.3%
-QHTBs with avg. wage “\$75K- \$99.9K”	32.3%	27.3%
-QHTBs with avg. wage “\$100K- \$149.9K”	29.0%	36.4%
-QHTBs with avg. wage “\$150K or over”	12.9%	9.1%

1. Statistics on other than research expense and credit amount are based on 31 QHTBs that submitted the survey .

2. Including one QHTB whose claimed credit was partially certified.

3. Regular employees including both full-time and part-time. It doesn’t include temporary or seasonal jobs.

4. Weighted by the number of full-time employees at each QHTB.

1. Introduction

Many states have been implementing a state research tax credit in conjunction with the federal research tax credit, to further promote research activities of businesses in the state.

Hawai‘i’s effort to encourage research activities through tax incentives started as early as 1999. Act 178 in 1999 contained a state tax credit for research activities. However, the tax credit was limited to 2.5% of new research expenses in Hawai‘i and was non-refundable.

Benefits of the Hawai‘i research tax credit increased substantially in 2000, when Act 297 raised the Hawai‘i research tax credit from 2.5% to 20% of the qualified research expenses to match the federal standard and made the credit refundable. The controversial Act 221 in 2001 that increased the tax credit for investment in high technology industry to 100% of investment, augmented the benefit of the research tax credit as well by allowing the research credit to be claimed for all qualified research expenses, not just the incremental amount, while it remained refundable. Hawai‘i research tax credit was amended once more in 2004 when Act 215 limited credit eligibility to Qualified High Technology Businesses (QHTB) only. This old research tax credit sunset in 2010.

Act 270, Session Laws of Hawai‘i 2013, re-established Hawai‘i’s research tax credit for the tax years from 2013 to 2019. The credit remained at 20% of the qualified research expenditures and continued to be refundable. However, it adopted federal rules again for eligibility, which means that qualified research expenses are limited to incremental amounts only. Act 270 also enhanced reporting requirements. It mandated all QHTBs that claimed the state research tax credit to complete an annual survey with the Hawai‘i Department of Business, Economic Development, and Tourism (DBEDT).

DBEDT submitted to the legislature seven annual reports for the tax years 2013 to 2019 with aggregated statistics on the activities of the QHTBs based on the survey results. Many QHTBs that claimed the tax credit during the period, however, interpreted the survey requirement as not mandatory that resulted in significant differences between the amount of the credit reported in the DBEDT survey and the amount of the credit claimed with the Hawai‘i Department of Taxation. The total amount of credits claimed with the Hawai‘i Department of Taxation for the tax years 2013 to 2019 was \$18.8 million (an annual average of \$2.7 million). The amount of credits reported in the DBEDT survey for the seven tax years was a total of \$9.2 million (an annual average of \$1.3 million), which was about half of the actual amount claimed with the Hawai‘i Department of Taxation.

In 2019, the legislature passed Act 261, extending the state research tax credit for five more years through December 31, 2024, with a few changes. As in Act 221 (2001), the amount of tax

credit is determined without regard to the amount of expenses in previous years. Credit can be taken based upon all qualified research expenses incurred in Hawai'i in that tax year. However, it requires all claims to be certified by DBEDT before they are claimed with the Hawai'i Department of Taxation. It also established an annual credit cap of \$5 million of the aggregated amount of certified credit per year.

This is the fourth report that was prepared pursuant to Act 261. The purpose of this report is to provide a summary of the activities and characteristics of the QHTBs that applied for the Hawai'i research activity tax credit for the tax year 2023. This report includes statistics on various aspects for two groups of QHTBs: all QHTBs that applied for the state tax credit and a subset of the QHTBs of which claims for the tax credit were certified this year. The QHTBs of which claims were not certified are included in this report as well because they were potential recipients of the tax credit, their research expense must be determined with the expectation of receiving the tax credit, and their activities and characteristics can be as equally important as those of the certified QHTBs in drawing policy implications.

2. Summary of Research Activities and Tax Credit Certification

There are two requirements for a business to be eligible for the Hawai‘i tax credit for research activities. First, the business must be a Qualified High Technology Business (QHTB) by conducting more than 50% of its activities in qualified research. Second, it must claim the federal research tax credit under Section 41 of the Internal Revenue Code. Once a technology company satisfies these two conditions, their total research expenses incurred in Hawai‘i are eligible for the Hawai‘i state tax credit for research activities.

Eligible research expenses and tax credit claimed and certified

A total of thirty-two QHTBs applied for the Hawai‘i state research activity tax credit for the 2023 tax year by submitting an executed Form N-346A by March 31, 2024. All except one submitted the DBEDT survey of their business activities, that is required to complete the qualification. DBEDT issued certificates to eleven QHTBs on a first-come, first-served basis verifying the information submitted by the businesses. Ten QHTBs were certified for the full amount they claimed while one QHTB was certified for a partial amount of the credit it claimed. Throughout this report, ‘all QHTBs’ or ‘all applicants’ refers to the thirty-two QHTBs that applied for the credit (or thirty-one QHTBs that submitted the DBEDT survey if the statistics were calculated based on the DBEDT survey), and the ‘certified QHTB’ refers to the eleven certified QHTBs including the QHTB of which claimed credit was partially certified.

Table 1. Application and certification of Hawai‘i research tax credit, tax year 2020-2023

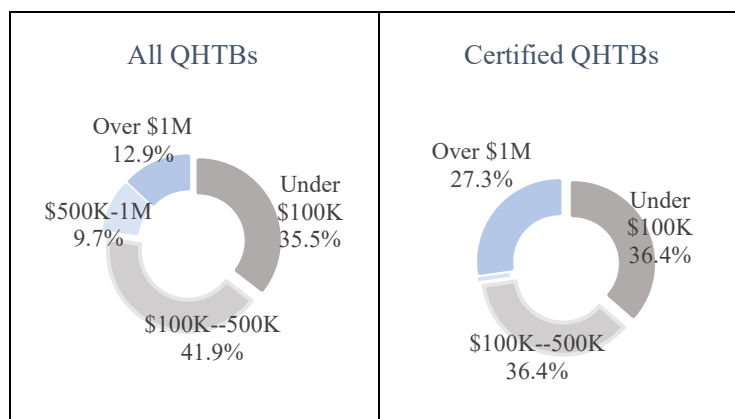
		Tax year			
		2020	2021	2022	2023
All QHTBs that applied for the credit	Number of QHTBs	40	34	26	32
	Research expenses in Hawai‘i	\$66.4M	\$66.8M	\$59.4M	\$63.5M
	Tax credit claimed	\$13.3M	\$13.3M	\$11.9M	\$12.7M
	Avg. tax credit claimed per QHTB	\$0.33M	\$0.39M	\$0.46M	\$0.40M
Certified QHTBs	Number of QHTBs	10	9	9	11
	Research expenses in Hawai‘i	\$27.6M	\$30.0M	\$31.0M	\$31.1M
	Tax credit claimed	\$5.5M	\$6.0M	\$6.2M	\$6.2M
	Tax credit certified	\$5M	\$5M	\$5M	\$5M

A combined total of \$63.5 million was spent on qualified research activities in Hawai‘i by the thirty-two QHTB. In accordance with the Act 261, 20% of the qualified research expenses, \$12.7 million, was claimed for the state tax credit, but \$5 million was certified due to the annual cap on the tax credit. The \$5 million of certified tax credit is 39.4% of total tax credit claimed for the tax year 2023.

Reflecting the change made in Act 261 in calculating the qualified research expense from “incremental amount” to “total amount”, the average amount of credit claimed per QHTB for the years from the 2020 tax year was much larger than the average credit claimed for the 2013 to 2019 tax years. A total of \$12.7 million tax credit claimed for the tax year 2023 was \$0.40 million average credit claimed per QHTB. In comparison, the average tax credit claimed per QHTB that submitted the DBEDT survey for the tax years 2013 to 2019 was \$0.11 million.

The amount of credit each individual QHTB claimed varied significantly by company though, ranging from less than \$10,000 to over \$2 million. Among all tax credit applicants this year, seven QHTBs claimed less than \$50,000. Three of them were certified. On the other hand, there were four QHTBs that claimed over \$1 million credit including one with over \$2 million tax credit claimed.

Figure 1. QHTBs by the amount of tax credit claimed



Three of the four QHTBs were certified, fully or partially, this year. The largest amount of credit certified for a QHTB this year was \$1.54 million.

Research expenses funded by out-of-state sources

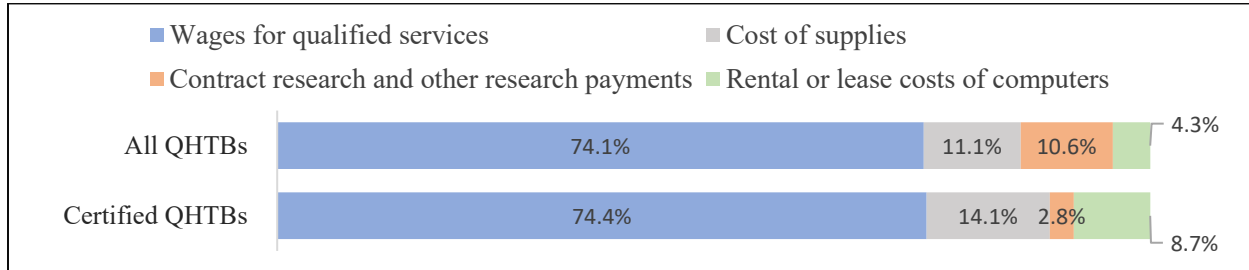
Of the thirty-one QHTBs who completed the DBEDT survey, two QHTBs reported that the full amount of their research expense was funded by out-of-state sources. There were two other QHTBs of which about 10 percent of their research expenses were funded by out-of-state sources. In aggregate, the portion of research expenses funded by out-of-state sources was small at 1.8% of total research expenses.

Uses of the qualified research expenses

The majority of the qualified research expenses was spent for wage payment. In aggregate, about three-quarters of the research expenses incurred in Hawai‘i in tax year 2023 was paid for wages. At individual QHTBs, more than ten QHTBs reported that their entire research expense was wage payment. Other qualified research expense includes expenses for supplies, rental or lease of computers, and contract research or other research payments. Although not all QHTBs

had these expenses, these other-than-wage expenses consisted about a quarter of total qualified research expenses incurred in Hawai‘i.

Figure 2, Qualified research expenses incurred in Hawai‘i by use of the expense

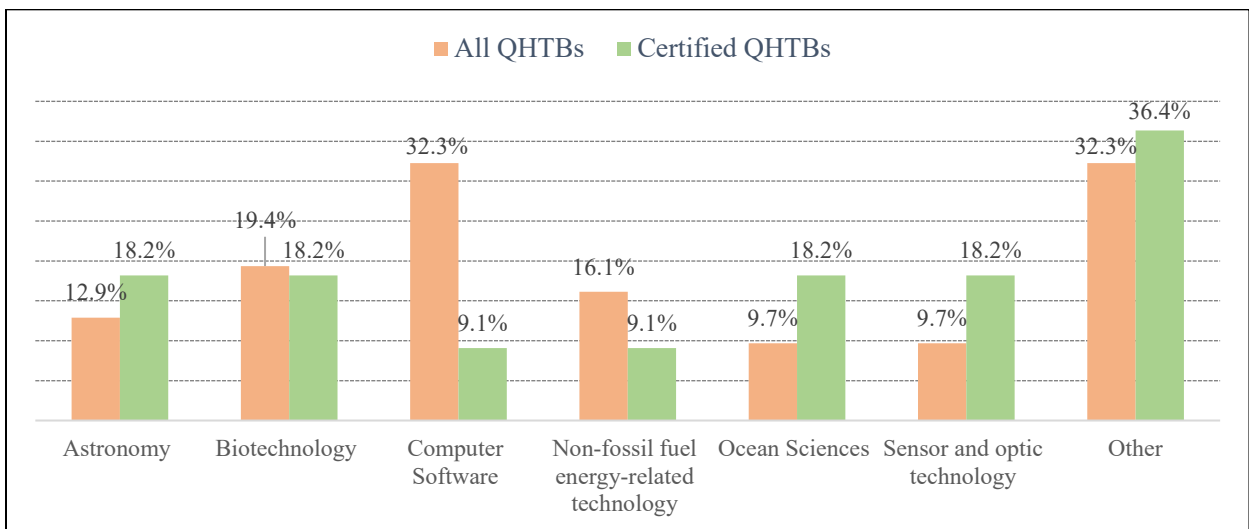


Areas of research

Businesses were asked to indicate in which area(s) they conducted research during the year. Seven research areas, that were employed in defining ‘Qualified research’, were provided in the survey. Figure 3 presents the areas where the QHTBs conducted research in allowing multiple counts of QHTBs if they conducted research in multiple areas. Among all tax credit applicants, ‘Computer software’ was the most common research area where ten QHTBs conducted research. As for the eleven certified QHTBs, their research was spread relatively evenly over all areas rather than showing a concentration on certain areas.

Ten QHTBs reported that they did research in areas outside these seven areas. Research areas that the businesses reported under ‘Other’ included ‘Architectural Design/civil engineering’, ‘Agricultural seeds’, ‘Fertilizer manufacturing’, ‘Water’, ‘Aircraft emergency vision assurance systems’, and ‘Other information technology research’.

Figure 3. Areas where research was conducted in 2023 (% based on the number of QHTBs)



3. QHTBs' Economic Activities and Economic Impacts

Economic activities of QHTBs

Table 2 summarizes the aggregate economic activities of all QHTBs who completed the DBEDT survey, and their breakdown based on whether tax credit claimed by the company was certified or not. The thirty-one QHTBs that completed the DBEDT survey generated a total of \$275.8 million revenue from all goods and services produced in Hawai'i, and spent almost the same amount, \$273.6 million, as operating cost. That was \$8.9 million revenue and \$8.8 million operating cost per QHTB on average.

Table 2. Summary of economic activities of QHTBs, tax year 2023

	All QHTBs	QHTBs of which claimed tax credits were certified	QHTBs of which claimed tax credits were not certified
Annual revenues/expenses ¹			
Revenue	\$275.8M	\$62.9M	\$212.9M
Operating cost	\$273.6M	\$86.6M	\$186.9M
Capital expenditures	\$9.2M	\$0.9M	\$8.3M
Research expenses ²	\$63.5M	\$31.1M	\$32.4M
Employment in all activities ³			
Number of employees	1,104	526	578
- Hawai'i-residents	1,034	493	541
- Non-Hawai'i residents	70	33	37
% of Hawai'i residents	93.7%	93.7%	93.6%
Employment in research activities ³			
Number of employees	778	454	324
- Hawai'i-residents	733	425	308
- Non-Hawai'i residents	45	29	16
% of Hawai'i residents	94.2%	93.6%	95.1%

¹ Earned from or incurred for all goods and services produced in Hawai'i.

² Research expenses incurred in Hawai'i.

³ Includes both full-time and part-time employees but excludes temporary and seasonal employees.

A total of 1,104 employees were working in regular positions, as of December 12, 2023, at the thirty-one QHTBs that completed the DBEDT survey. Most of them, 93.7%, were full-time employees. Since the requirement to be a QHTB is to conduct more than 50% of its activities in qualified research, the proportion of research jobs was high at the QHTBs. About three-in-four regular employees were employed for research activities at the QHTBs. Looking at the eleven certified QHTBs only, the proportion of research jobs was higher at 86.3% of total regular jobs.

The vast majority of the employees working at the QHTBs were Hawai‘i residents. Ten QHTBs reported that there were some non-Hawai‘i residents among their employees, either full-time or part-time, as of December 12, 2023. However, the combined share of non-resident employees among total regular employees at the QHTBs was low at 6.3%. The share of non-Hawai‘i resident employees among all research positions were similar at 5.8%. More characteristics of QHTBs’ business and employment are provided in Section 4 and 5.

Economic impacts of research activities and effectiveness of the tax credit

Research activities, like other economic activities, would have impacts on outputs, employment, and tax revenues in the area where the activities are conducted. But the more important role of research activities is in that they facilitate innovation and inventions that are the essentials for future economic growth. Also, many companies and individuals, that are not directly related to the company conducting the research, may benefit from innovation, which is called a spillover effect. Long-term benefits of research activities were examined and documented in many literatures.

Given the long-term benefits of researches to the local and national economy, governments often intervened through a tax credit because long-term benefits and spillover effects of research investment are not fully counted in research decision made at an individual company, and therefore the total amount of research is likely to be determined at a level lower than desirable from the society’s point of view.

Economic impacts of research activities	Effectiveness of the state tax credit
<p>1. Short term effects - Direct impacts of research activities on economy’s outputs, employments, and tax revenues</p> <p>2. Long term effects - Research spurs innovation and invention that will lead future economic growth</p> <p>3. Spillover effects - Many firms and individuals, not directly related to the firm conducting the research, may benefit from innovation created by the firm</p>	<p>Tax credit lowers the cost of qualified research, which would encourage and increase research activities.</p> <p>Effectiveness of the research activity tax credit would be determined by how much additional research activities were done due to the tax credit</p>

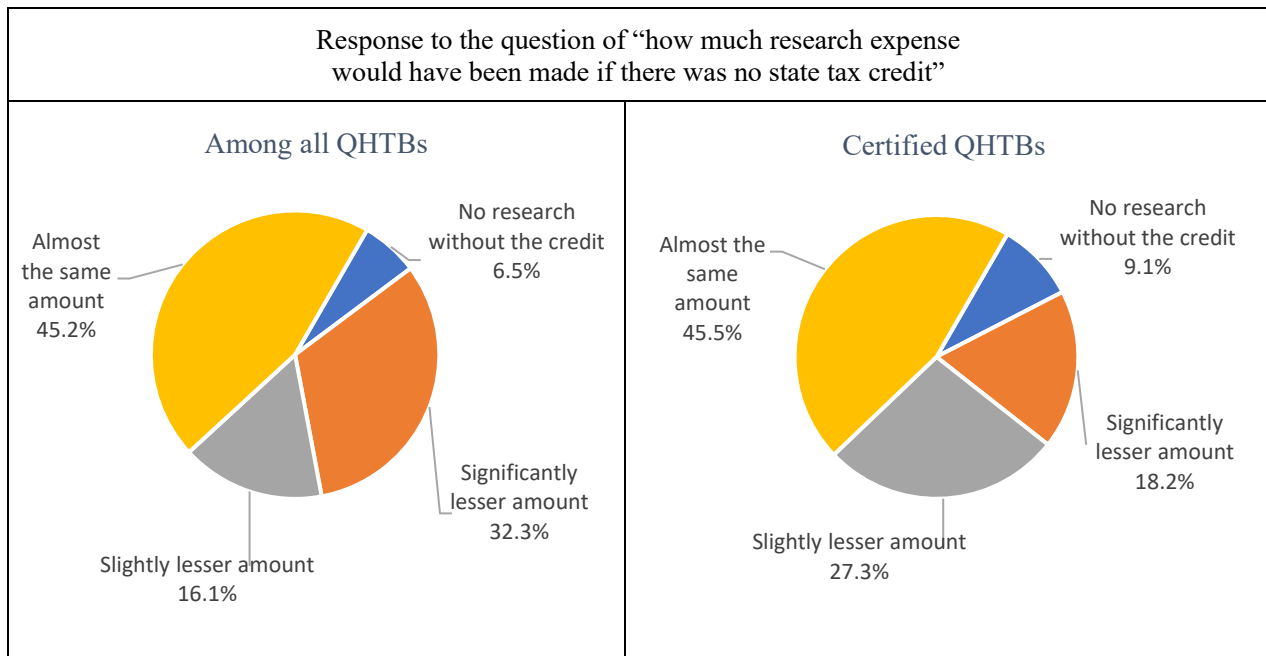
The role of a tax credit for research activities is to lower the cost of qualified research, which is expected to encourage companies to increase their research investment. Therefore, one of the main questions to be asked about the Hawai‘i state tax credit for research activities is whether the tax credit has been effective in encouraging the companies to increase their research spending in Hawai‘i. This question is hard to answer though because to answer the question we need to know the amount of research activities that each QHTB would have done without the state tax credit and the companies may not want to reveal the true amount.

Self-reported impact of the state tax credit on research spending

Although there is no assurance that all businesses would share the true impact, the DBEDT survey asked a question anyway, that would help us to draw insights about the effectiveness of the tax credit.

To the question asking the impact of the state tax credit on their research decision, 38.8% of all applicants and 27.3% of the certified QHTBs answered that they would have made no or significantly lesser amount of research spending without the state tax credit. However, fourteen QHTBs, 45.2% of all applicants, answered that they would have made almost the same amount of research spending. The survey didn’t ask the reason for no or little impact of the tax credit, but it could probably be because the research decision was dominantly determined by factors other than the cost of the research, or because the tax credit was not fully taken into account in their research decision due to the uncertainty in getting their claim to be certified.

Figure 4. Self-reported impact of the state tax credit on QHTB’s research spending

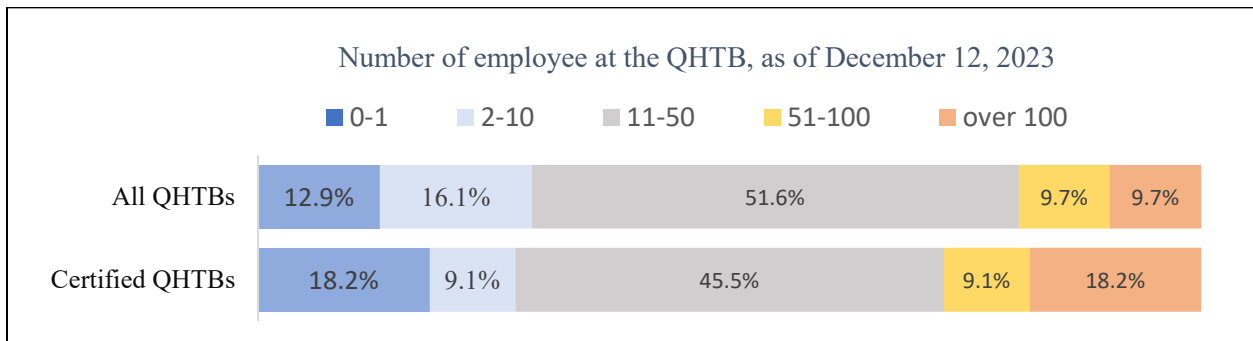


4. Characteristics of QHTBs- Employment

Employment size

The size of the companies, measured by the number of employees at the QHTB, varied substantially by QHTB. The number of regular employees at each QHTB ranged as small as zero to greater than 170. Over 30% of the QHTBs were small sized with ten or less employees, of which four QHTBs were particularly small with none or one employee. On the contrary, three QHTBs had more than one hundred employees, as of December 12, 2023.

Figure 5. QHTBs by the size of employment¹

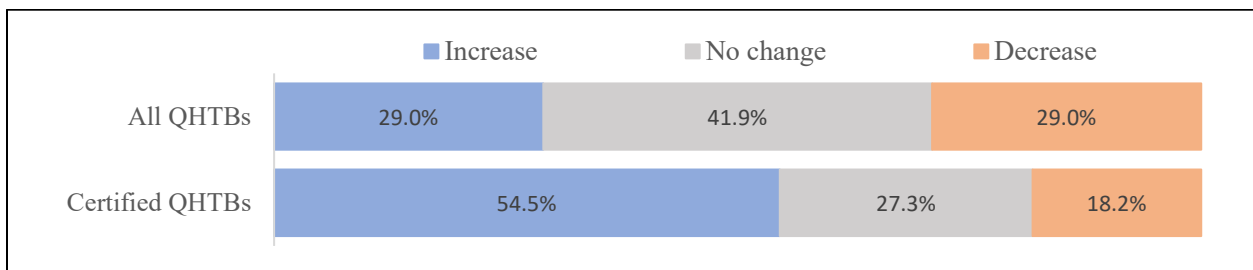


¹ Includes both full-time and part-time employees but excludes temporary and seasonal employees

Change in the number of jobs at QHTBs

As in the previous years, there was no clear indication of positive impacts of the research tax credit on research job creation in the high-tech companies in Hawai'i. In aggregate, the number of employees working for research activities at the QHTBs in 2023 showed a small increase from the previous year. At the individual company level, however, the job performance was mixed. While nine QHTBs experienced an increase in research jobs, there were thirteen QHTBs with no change and nine QHTBs that experienced a decrease in research jobs. Compared with the QHTBs not certified this year, more of the certified QHTBs reported an increase in research jobs between 2022 and 2023 although the size of the increase was mostly small.

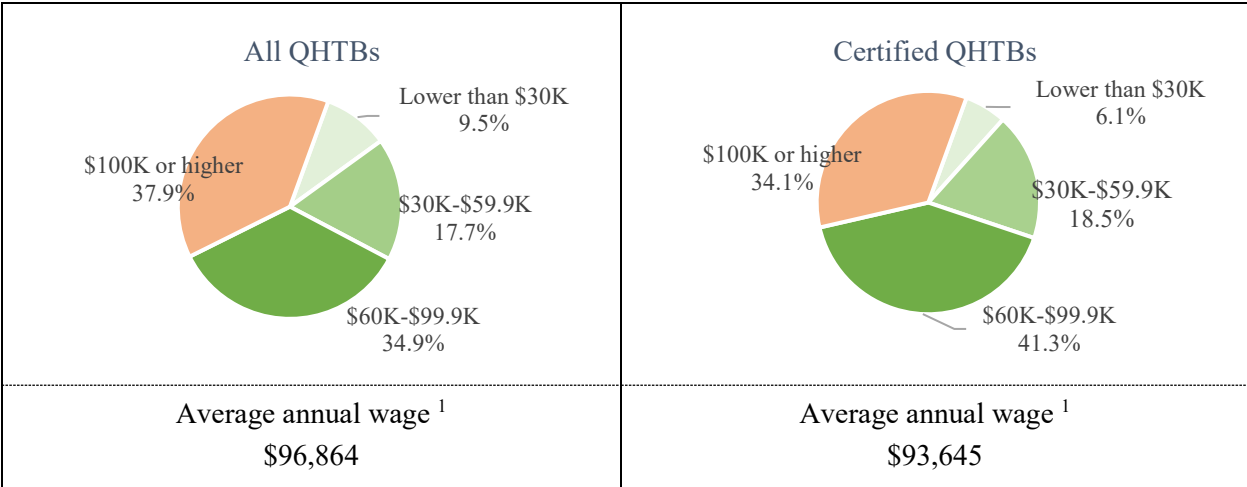
Figure 6, QHTBs by the change from previous year in the number of research jobs



Wages

Among the 1,034 full-time employees at the QHTBs, over a third were paid at least \$100,000 annually with an average annual wage, weighted by the number of full-time employees at each QHTB, at \$96,864. The wage distribution of full-time employees at the eleven certified QHTBs was quite similar with an average annual wage at \$93,645.

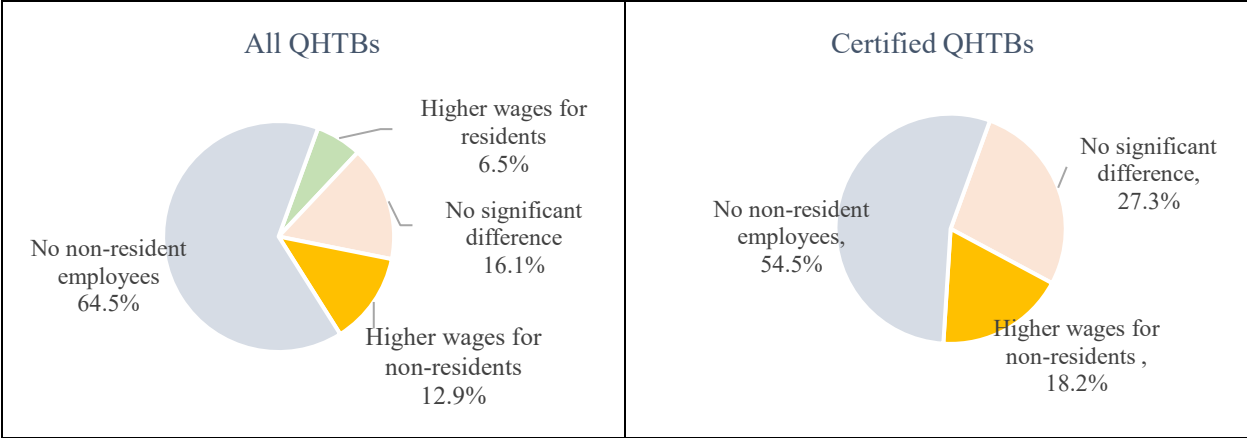
Figure 7. Distribution of annual wage of full-time employees at QHTBs



1. The averages were calculated using the number of full-time employees at each QHTB as weights

A few questions about non-resident employees were added to the survey for the first time this year to get some hints for the size of non-resident employees at the high-technology firms in Hawai‘i and any difference in compensation between resident employees and non-resident employees. As reported in the previous section, among the total of 1,104 employees working at the thirty-one QHTBs, as of December 12, 2023, less than 7% were non-Hawai‘i residents. Ten QHTBs, of which five were certified, reported that they had non-resident employees, but no significant or systematic differences were observed in their average annual wages for resident and non-resident employees.

Figure 8. QHTBs by wage difference between resident and non-resident employees

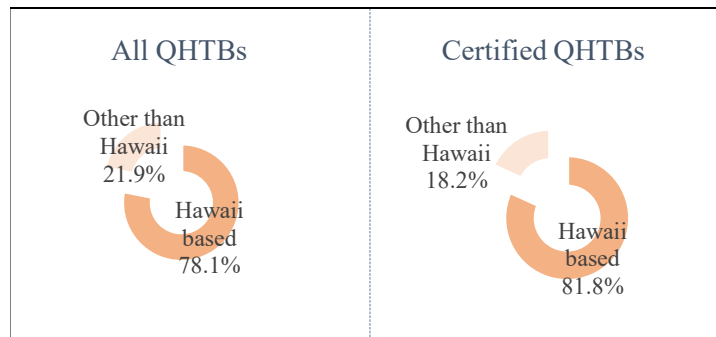


5. Characteristics of QHTBs -Business Activities

Business location

There were seven QHTBs (two of them were certified) that provided a business address outside Hawai‘i, which means that they were headquartered in an out-of-state location. Out-of-state addresses provided by those seven QHTBs included California (2), Delaware (2), Colorado (1), New Hampshire (1), and Washington (1).

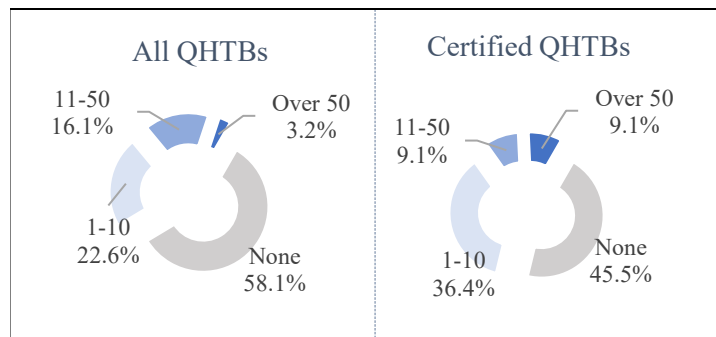
Figure 9, QHTBs by business location



Number of patents originated in Hawai‘i

A total of 238 patents were reported to be owned or pending as of December 31, 2023, by the thirty-one QHTBs that submitted the DBEDT survey. About half of the QHTBs didn’t own even a single patent originated in Hawai‘i. Conversely, there were six companies with more than ten patents owned or pending as of December 31, 2023. Two of them were certified.

Figure 10, QHTBs by the number of patents owned¹

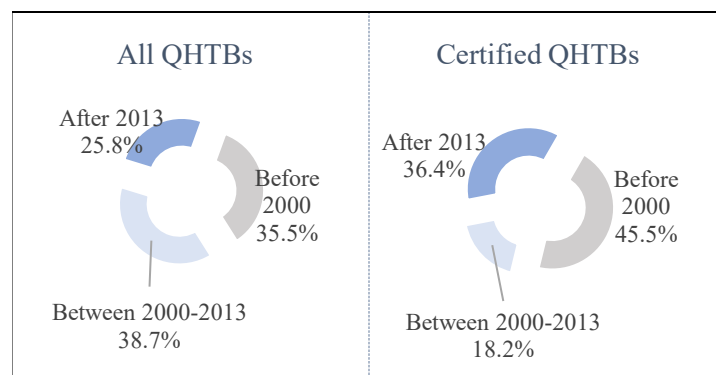


1. owned or pending as of 12/31/2023, originated in Hawai‘i

History of business

Majority of the QHTBs that applied for this year’s tax credit had a long history of doing business as about three quarters of the QHTBs were established ten or more years ago. Among the eight QHTBs with less than ten years of history, one QHTB was established after 2020 while other seven QHTBs were established more than five years ago.

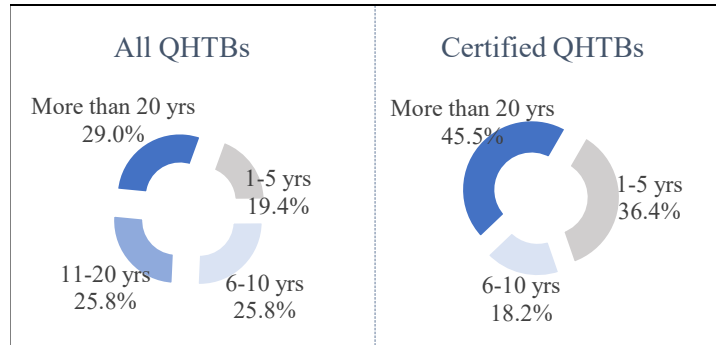
Figure 11, QHTBs by when it was established



History of research activities

Many QHTBs that applied for this year’s tax credit have been doing the research for quite a long time. About 30% of all QHTBs and almost 50% of the eleven certified QHTBs have been doing research for more than 20 years. On the other hand, six QHTBs (four of them were certified this year) were relatively new with the history of doing research for 5 or less years.

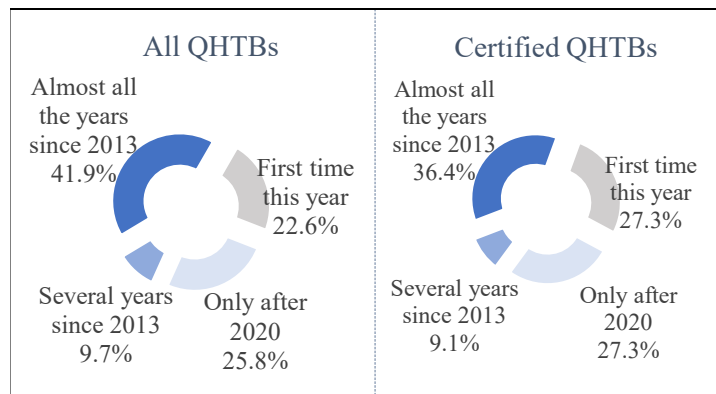
Figure 12, QHTBs by years of research activities



History of claiming the Hawai‘i state research activity tax credit

The majority of the QHTBs have been applying for the state research activity tax credit even before the new version of the credit started in 2020. However, about a quarter of the QHTBs began to apply for this tax credit only after the base for the calculation of tax credit changed from incremental amount to total research amount. About a quarter of the QHTBs applied for the state tax credit for the first time this year.

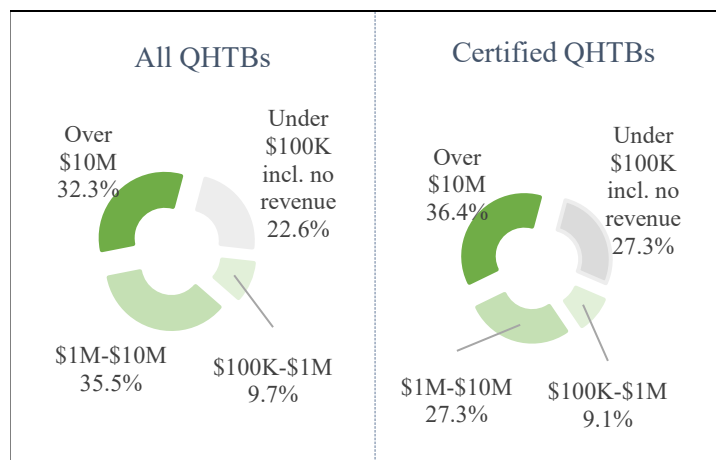
Figure 13, QHTBs by history of claiming the Hawai‘i research activity tax credit



Revenue size

The survey showed a wide range of revenue each QHTB earned in 2023, from no revenue to over \$60 million of annual revenue. Including four QHTBs that reported no revenue in 2023, about a quarter of the QHTBs had revenue less than \$100,000, which would have just covered the wage of one full-time employee. In contrast, about one third of the QHTBs earned over \$10 million of revenue in 2023

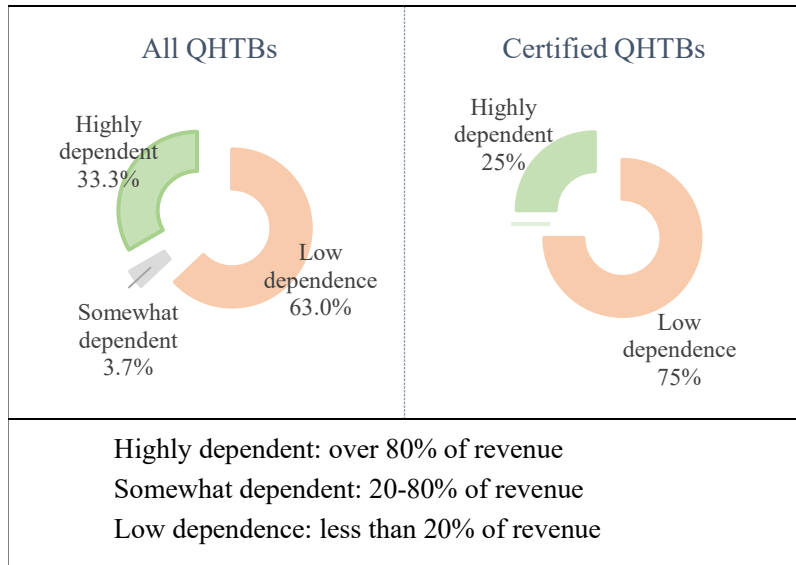
Figure 14, QHTBs by the size of revenue



Dependence of revenue on out-of-state sales -----

QHTBs were either highly dependent on out-of-state sales for their revenue or not dependent at all with not many companies in between. There were nine QHTBs of which revenues relied almost entirely on out-of-state sales. Conversely, revenues of another thirteen QHTBs came entirely from local sales. In aggregate, 26.5% of the total revenue earned by the twenty-seven QHTBs with a positive revenue in 2023 came from out-of-state sales.

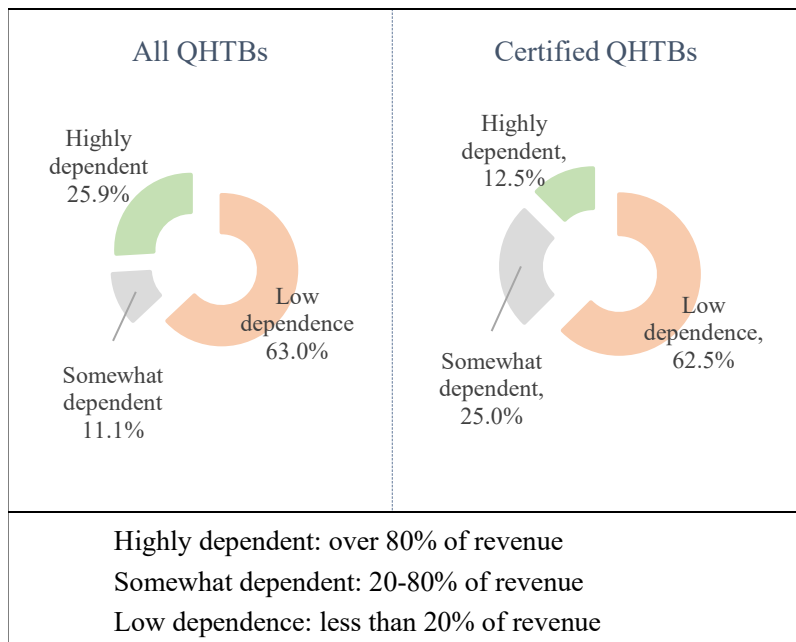
Figure 15, QHTBs by dependence of their revenue on out-of-state sales



Dependence of revenue on intellectual property-based sales -----

Consistent with the fact that about half of the QHTBs owned no patent yet, the overall reliance of the QHTB’s revenues on intellectual property-based sales was not high. There were six QHTBs of which revenue came entirely from intellectual property-based sales. While there were some QHTBs with part of their revenues coming from intellectual property-based sales, 63.0% of all QHTBs with a positive revenue in 2023 had no intellectual property-based revenue. In aggregate, 25.7% of the total revenue earned by the twenty-seven QHTBs with a positive revenue in 2023 were from the intellectual property-based sales.

Figure 16, QHTBs by dependence of their revenue on intellectual property-based sales

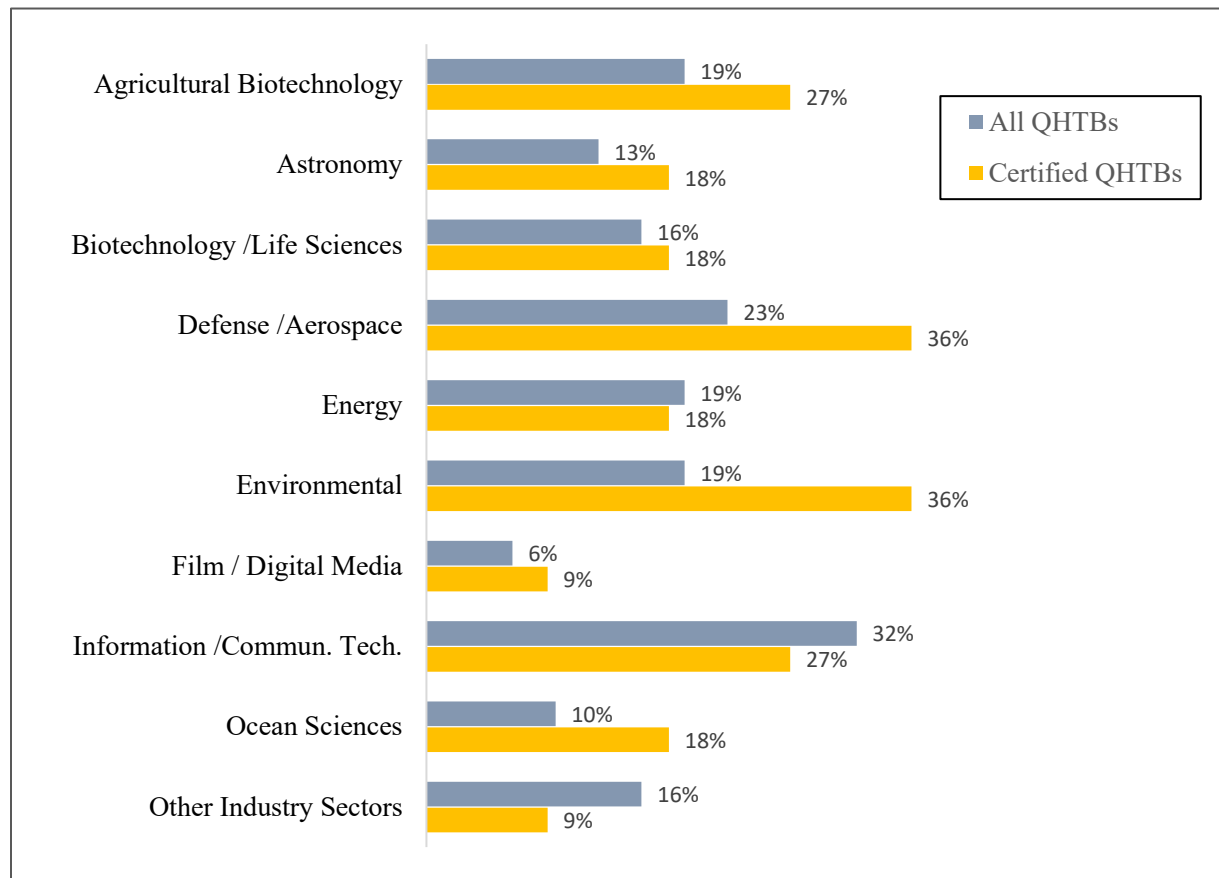


Business areas -----

The survey asked each QHTB to indicate all industry sectors where the QHTB conducted business in 2023. Eight major business sectors consisting of eighty-four sub-sectors were provided in the survey as business categories. By broad category, about 80% of the QHTBs reported that they conducted business only in one business sector. Six QHTBs did business in more than one sector: four QHTBs doing business in many different sectors and two QHTBs doing business in two sectors, but seemingly related activities.

Counting multi-sector companies multiple times for all industry sectors they did business in, ‘Information and Communication Technology’ sector was the most popular business sector among the QHTBs with ten QHTBs doing business in the sector. Among the certified QHTBs, ‘Defense/Aerospace’ and ‘Environmental’ were the most popular sectors, with four QHTBs doing business in each sector. Table A-2 in the appendix at the end of this report shows business activities of the QHTBs by detailed business category.

Figure 17. Number of the QHTBs that conducted business in each sector (with multiple counting)¹



¹ multi-sector companies were counted for all sectors where they did business.

Appendix

Table A- 1. List of the QHTBs that applied for Hawai‘i research tax credit, tax year 2023

Company name	Business Location	Certified
Hawai‘i Aerospace Corporation	Hawai‘i, Honolulu	Yes
HiPoint Software, LLC	Hawai‘i, Honolulu	Yes
Limtiaco Consulting Group, Inc.	Hawai‘i, Honolulu	Yes
Makai Ocean Engineering, Inc.	Hawai‘i, Waimanalo	Yes
Nalu Scientific, LLC	Hawai‘i, Honolulu	Yes
Oceanit Laboratories, Inc.	Hawai‘i, Honolulu	Yes
Pioneer Hi-Bred International, Inc.	Delaware, Wilmington	Yes
Simonpietri Enterprises LLC	Hawai‘i, Kailua	Yes
Symbrosia, Inc.	Hawai‘i, Kailua-Kona	Yes
Wilson Okamoto Corporation	Hawai‘i, Honolulu	Yes
Yieldmo, Inc.	New Hampshire, Nashua	Yes
Alpha, Inc.	Hawai‘i, Kahului	No
Blue Planet Energy Systems Inc.	Hawai‘i, Honolulu	No
Brown and Caldwell	Colorado, Lakewood	No
CG Management	Hawai‘i, Kilauea	No
Decision Research Corporation	Hawai‘i, Honolulu	No
EMC2 Technologies LLC	Hawai‘i, Captain Cook	No
H NU Photonics LLC	Hawai‘i, Kahului	No
Hanalei Poi Company, LLC	Hawai‘i, Hanalei	No
Hawai‘i Biotech Inc.	Hawai‘i, Honolulu	No
Kuehnle AgroSystems	Hawai‘i, Honolulu	No
LiveAction Holdings, Inc.	California, Campbell	No
Lowney Inc.	California, Oakland	No
Ozolio Inc.	Hawai‘i, Makawao	No
PacMar Technologies LLC	Hawai‘i, Honolulu	No
Spirent Communications Hawai‘i LLC	Hawai‘i, Honolulu	No
Sustainable Bioresources LLC	Hawai‘i, Naalehu	No
Syngenta Seeds LLC and Affiliates	Delaware, Wilmington	No
Trutag Technologies, Inc.	Hawai‘i, Kapolei	No
VisionSafe Corporation	Hawai‘i, Kaneohe	No
WCIT Architecture Inc	Hawai‘i, Honolulu	No
Zillow Group Inc. & Subsidiaries	Washington, Seattle	No

Table A- 2. Business area of the QHTBs in 2023 by detailed category
(A QHTB is counted multiple times if it conducted business in multiple areas)

Industry sector	Subsector	Number of QHTBs	
		Among all QHTBs	Among certified QHTBs
Agricultural Biotechnology	Aquaculture	2	1
	Forestry	1	0
	Plant Tissue Culture	2	1
	Seed Propagation/Seed Corn	3	1
	Other	3	1
Astronomy	Adaptive Optics	1	0
	Modeling & Simulation	1	0
	Photonics	2	1
	Precision Mechanics	1	0
	Remote Sensing	3	2
Biotechnology/ Life Sciences	Biocomputing	1	1
	Bioinformatics/ Biophotonics	1	0
	Biologics/ Vaccines	1	0
	Contract Research Organization	1	0
	Diagnostics/Therapeutics	1	1
	Genomics/Proteomics	1	1
	Healthcare Facility	1	0
Medical Devices	2	1	
Defense/ Aerospace	Communications & Computer Systems	2	1
	Information Services	2	1
	Modeling/Simulation/Training	2	1
	Optics	1	1
	Photonics	2	1
	Remote Sensing	3	2
	Specialty Software Development	1	0
	Testing & Evaluation	2	1
	Other	3	1

Table A- 2. Business area of QHTBs in 2023 by detailed category -- continued
(A QHTB is counted multiple times if it conducted business in multiple areas)

Industry sector	Subsector	Number of QHTBs	
		Among all QHTBs	Among certified QHTBs
Energy	Distributed Generation	3	0
	Energy Efficiency	4	1
	Fuel Cells	2	0
	Geothermal	1	0
	Renewable Fuels	4	2
	Solar	4	0
	Waste-to-Energy	1	1
	Other	2	1
Environmental	Air Technologies	1	1
	Disaster Mitigation Management	2	2
	Soil Technologies	2	1
	Water Technologies	5	3
	Other	5	3
Information/Communication Technology	Information Services	2	0
	Laser	1	0
	Optics	2	1
	Photonics	2	1
	Remote Sensing	3	2
	Specialty Software Development	8	1
	Telecommunications/Networks	2	0
	Testing & Evaluation	1	0
	Other	1	1
Ocean Sciences	Marine Biotechnology	1	1
	Ocean Engineering	3	2
	Remote Sensing	1	1
Other sectors	Architecture/Civil Engineering Design	5	1