

Submission by



HOLDEN

to the

**House of Representatives Standing
Committee on Science and Innovation**

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**Inquiry into Business Commitment to
R&D in Australia**

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Overview

Holden has a special place in Australia's history as the manufacturer of the first all-Australian car, the 48-215 (FX). Since then, a succession of models has been produced and these models have become an integral part of the Australian way of life. Today, Holden employs approximately 8000 people Australia-wide and has produced more than six million vehicles. The company's major operating facilities are located at Fishermans Bend (technical centre, administration, and engine manufacturing plant), Dandenong (service parts operation) and Lang Lang (proving ground) in Victoria; as well as at Elizabeth (vehicle manufacturing plant) in South Australia.

Holden has evolved from a domestic manufacturer into an internationally competitive global company, exporting vehicles and engines to a diverse worldwide market. In 2001, Holden exports contributed \$1.16 billion to Australia's balance of trade. Holden predicts that by 2005 its export revenue earnings will reach the \$2.3 billion mark, buoyed by global sales of V6 engines to be produced at a new engine facility in Melbourne. By this time Holden's vehicle export business will account for one third of annual vehicle production.

Holden's ability to maximise its opportunities as a global niche player will be critical to our future success. Holden's strategic direction for growth requires both an expanded share of the Australian domestic market through broadening of the product range as well as expanded export volume. The key to achieving success in all of these areas lies in our ability to capitalise on the niche that we have carved out for Holden within the GM organisation, as a manufacturer and supplier to global markets of large, rear wheel drive passenger motor vehicles.

Holden's strategy for increasing scale of production and maximising its niche opportunities is to build on both domestic and export market opportunities. This cannot be achieved simply by building more of the same products that we produce today. Inherent in Holden's strategy is the need to develop new and innovative products that will allow this growth to occur. Lead times must be reduced and it is critical that adequate support for research and development in Australia is provided to support the development of these products to meet emerging market needs.

Holden strongly believes that the key to success for the Australian automotive industry will be its ability to make the transition to a truly globally competitive industry, which is not reliant on ongoing sector specific support. This requires that the drivers that will allow this to happen must first be identified and then strongly promoted through the transition phase. Support for research and development and associated investment will provide the strongest impetus for the industry to make the transition. It is quite clear that the future policy environment must support a high degree of research and development if the necessary product innovation to regain both domestic share and new export market opportunities is to be achieved.

In this submission Holden considers the key requirements for the future success and viability of our business and that of the wider automotive industry in Australia. The following points highlight the key recommendations to this inquiry:



- Holden believes that focus on R&D is essential for the future sustainability of the car industry. To achieve economies of scale the industry must increase volumes through increasing exports and import replacement. Investment in innovative, high risk R&D must be encouraged through future Australian R&D programs to support this activity.
- Holden believes that reform of current R&D assistance mechanisms is required to ensure that at least some aspects are closely targeted at highly innovative R&D and that they are accessible by the automotive industry. A mechanism for encouraging such activity could be provided as a graduated subsidy based on the level of innovation.
- R&D must be supported in cases where Australia gains from the downstream effects (car and component manufacture) of the activity in addition to those cases where direct gains are accrued from the R&D activity itself.
- Credit needs to be given for concept development as well as product development to assist in reducing the risk of investing in highly innovative R&D initiatives.
- Australia is lagging behind other developed countries in the key area of support for R&D. Accordingly, Australia's position on provision of support relative to all other automotive producing countries must be considered in any policy review.

Holden welcomes the Government's initiative to conduct this inquiry into the level of business investment in research and development. More general forms of support, such as that provided by R&D concessions and investment attraction schemes must be sustained at internationally competitive levels. Developed countries are increasingly sophisticated in the support provided for research and development and Australia should be part of this trend if the policy environment is to support a more knowledge intensive economy.

Holden has provided two submissions (May and August 2002) to the recent inquiry by the Productivity Commission into "Post 2005 Assistance Arrangements for the Automotive Manufacturing Sector". Holden's submissions¹ focus on the need for greater emphasis on R&D and investment assistance in order to expand domestic production and ensure a viable automotive industry in the future. The submissions were made in the context of modifications to future assistance arrangements provided by the current Automotive Competitiveness and Investment Scheme (ACIS) and we have drawn from our submissions to the Productivity Commission for the purposes of this inquiry.

¹ Holden's Submission to the June 2002 Review of Automotive Assistance (sub. 72) and Holden's Supplementary Submission (sub. PP101), August 2002 in response to the Productivity Commission's Position Paper

The Australian Automotive Industry: Holden's Strategy

Background

In a world over-supplied with automobiles, and with a saturated and slow-growing domestic market, Australia's strategic opportunity is to do something different. That something is for each manufacturer to produce a coherent family of niche vehicles to sell on world markets. In 2001, global vehicle production totalled 57,484,000 units. Australia produced only 332,000 of these vehicles representing only 0.6 per cent of world production. For Australia to remain a competitive location for vehicle manufacture it will be necessary for the vehicles that we produce to remain differentiated and relevant over time – which requires continuous innovation.

The Australian car industry must build on its established strengths in low volume economics, development of large low-cost cars, spinning off multiple vehicle variants from a single platform, and creating exciting products that offer a superior driving experience to an identifiable group of buyers. Holden's recent history shows that this formula has the potential to complement the traditional strengths of larger scale automotive specialists in other countries. This complementarity occurs because of globalisation trends in the world industry. Globalisation is causing the major car makers to rationalise their platforms, which improves their business economics but inevitably leaves a number of very small gaps in their product line-ups.

Filling these niches is a strategic opportunity for the Australian automotive industry. By choosing this direction, it is possible to add value to the corporate shareholders in two ways. First, it relieves the larger manufacturing centres of unprofitable involvement in low volume activity. Second, it allows Australian manufacturers to operate very viable specialised businesses providing the supplementary products that are needed in the larger markets to keep the parent corporation from losing sales and customers when they rationalise their own product lines.

In short, the industry can succeed by pursuing the world market for large low-priced vehicles of an exciting and innovative character. The world demand for such vehicles is a very small share of the total market – but this is an attraction rather than a problem, since it makes the opportunity too small to attract a profusion of overseas competitors.

With Australian domestic volume as a starting point, and provided a suitable range of product variants is created, the size of the opportunity is sufficient for financial viability. It has traditionally been thought that the ability to exist in the world of niche products is confined to premium-priced products, because of the inescapable laws of volume economics. Australia must partly escape this paradigm – not by foregoing premium positioning completely – but by aiming just above the mass market rather than far above it. The window of opportunity is small. Success requires continual product change, ongoing innovation, and clever design of very different products on a very standard platform.

Characteristics of the Australian Automotive Industry

Australia has four unusual features that shape the nature of its opportunity in the global automotive industry:

1. It is a medium-sized market in a remote location. As developing economies progress further, especially in Asia, Australia's automotive market will lose ground relatively and become a small-sized market in a remote location.
2. It has favourable domestic economic circumstances in terms of political stability, an educated workforce, and strong industrial infrastructure.
3. It has a volatile currency. When this is placed in the context of a capital intensive global industry with considerable capability to redirect product flows, together with long lead times and time-driven rather than volume driven product obsolescence, the result is very variable financial results from an Australian automotive producer. This, in a world that seeks to position auto companies as stable "blue chip" profit earners, is troublesome.
4. It has a large passenger car segment - consistently over 30 per cent of total passenger sales – by far the highest share in the world for this type of vehicle.

In response to these unique circumstances, Holden's strategic direction is based on the concept of widening our range of product variants based on our single platform. We expect the individual product variants to evolve and change far more quickly than in the past. This will require continuous product innovation, with associated implications for the structure of our resources. The result of this should be that Holden could provide overseas markets with an ongoing series of new products that enter, or even create, new market niches. Most likely "old" products will be retiring almost as quickly as new ones are emerging, resulting in a dynamic product portfolio.

Holden's Vision for the Industry: 2005 and beyond

In formulating its vision for the industry, Holden has taken into account the developments that are taking place in our immediate business environment, as well as the broader policy framework. All of these factors will have an impact on the industry, not only in the decade to 2010, but also in the decades beyond. For this reason, Holden believes that government policy must consider the long term perspective for our industry.

In terms of technological change alone, the automotive industry is about to make a major transition from internal combustion engines to fuel cells. Coupled with this is the on-going evolution of emissions standards, fuel standards and fuel consumption targets. At a broader level again, the policy frameworks that determine environmental performance standards and trade policy directions also have an impact.

Overall, the automotive industry is on the brink of a major shift in its fundamental posture. In the past the main driver of success was intense domestic competition, primarily consisting of price wars, especially in fleet markets. The future lies in another

direction, however. The danger now is lack of adequate production volume, as it has always been, but the solution is different. Import penetration must be rolled back by domestic manufacturers entering new market segments in Australia, and even more importantly, Australian exports must be greatly expanded by producing relevant, innovative and exciting products for sophisticated and growing export markets. The solution to these twin requirements involves the industry becoming substantially more R&D intensive even than its current level, which is very high by manufacturing standards generally. Australian cars no longer have an opportunity to lag world technological benchmarks in order to reduce costs; increasingly they must create new world benchmarks in their own special fields, in order to capture the attention of jaded consumers in the world's largest markets.

Implications of a Highly Globalised Industry for the Location of R&D Activity

With a relatively small production volume and correspondingly small capital resources, Holden is arguably one of the few viable manufacturers of its size in the world. One of Holden's strengths is its ability to produce a range of variants from one platform enabling entry into a number of market segments. Using this strategy, Holden is able to maintain its domestic market share, whilst also being able to build export markets for its niche products. These markets are typically not supplied by the domestic manufacturers in the countries concerned, largely due to the relatively low volumes that they represent.

Holden's strategy to produce a number of variants from one platform must be supported through innovative design and engineering. Innovation is the essential means by which Holden can compete against larger manufacturers with greater resources, adapt more quickly to market changes and capitalise on the opportunities that change presents. Innovation requires investment in research and development, and the use of external sources of information and knowledge. Some Australian suppliers are innovative, and can provide inspiration for new approaches. The CSIRO, universities and Cooperative Research Centres (CRCs) are also potential sources of innovative ideas. The collection of knowledge from all of these sources is an important input to the innovation process.

An Australian based automotive industry needs Australian R&D activity to be successful against resource-rich multinational competitors, and against government supported, low labour cost companies from the emerging industrial nations. Holden's focus on innovation in design and engineering to support its future strategy for volume expansion will increase the demands, not only on its own resources, but within the local supplier base. Some of Australia's industry is technically inadequately prepared to compete in the global market place. As a result, future policy settings for the industry must consider support for the focus that is required on innovation as a means of ensuring ongoing sustainability of the industry.

Australian based automotive companies are increasingly able to export their design and engineering services both to companies within their parent organisations and to other external companies. Holden is competing on the global stage to maintain its position as a competitive manufacturer and supplier of R&D capability within the GM organisation, and is considered to have world-class expertise for application throughout the world.

For GM, a globalised industry necessitates local R&D activity within design centres around the world. Holden is one of four regional engineering "centres of excellence" located within GM's operations worldwide. The technologies developed in the other GM engineering centres and at our multinational competitors provide Holden with a useful source of knowledge, but frequently these are not practical to implement within the Australian vehicle. Holden utilises Australian R&D activity to achieve an innovative vehicle design to compete in the Australian market and for export markets. Holden's product development strategy for "all-new" vehicles has usually involved taking a corporate platform (that provides the closest match to the unique market requirements for a large rear-wheel drive vehicle) and selectively using the best aspects of that platform that meet Holden's needs. Selectively using aspects of the corporate platform has allowed Holden to keep costs down while ensuring that the technology used in Australian vehicles remains contemporary. However, even those aspects of the vehicle design that are incorporated from the corporate platform are substantially changed.

It is inherent in Holden's emerging role as GM's global specialist in large rear drive vehicles, that the opportunity to adopt aspects of overseas vehicle designs will decrease in the future. Holden's business is progressively becoming substantially more R&D intensive both as a result of overseas platform designs becoming less relevant, and the increasing number of "platform variants" which we require as a niche product specialist.

In addition to its increasing commitment to unique design work on its own vehicle platform, Holden supports a number of countries in the region with expert engineering research and design capabilities thereby producing a strong support base for GM's growth strategy in the Asia-Pacific region. This provides Holden with the benefits of greater flexibility to support its business by having a larger pool of engineers than would otherwise be the case. The opportunity to develop these engineers as expert automotive specialists augments the value that Holden creates for the Australian community. In addition such activity not only contributes export earnings to Holden, but also maintains Holden's (and Australia's) place within the global GM R&D community.

Holden believes that focus on R&D is essential for the future sustainability of the car industry. To achieve economies of scale the industry must increase volumes through increasing exports and import replacement. Support for R&D is a key enabler in allowing Holden and the industry to progress this strategy. Our proposal for reform of future assistance provided through R&D programs focuses on the requirement for greater innovation in products and processes.

Benchmarking Automotive Industry Policy Environments

A range of policy tools are used worldwide to support the automotive industry. Both tariff and non-tariff methods are commonly employed and help domestic industries compete in a global market, which is oversupplied by world capacity. These barriers are often in the form of policies that restrict market access in that country, or alternatively, are designed to encourage preferential investment in that country.

Governments will strive to foster their domestic industry in light of the highly competitive global market. This commitment to a domestic automotive industry is driven by the perceived strategic benefits to the economy of that country. These benefits can include generation of employment, development of a core of relatively advanced technologies that are often transferred into other parts of industry, development of more efficient manufacturing processes and more generally, creation of a sense of national pride and identity.

The Allen Consulting Group and Deloitte Touche Tohmatsu have recently conducted a detailed investigation of policy environments in key automotive producing countries around the world. For further detail, reference can be made to this report.²

In all countries considered in the joint investigation by Allens and Deloitte's the policy environment has offered continuing encouragement of expenditure related to R&D. The linkages that such investment can have in the wider economy of these countries is a common philosophy. Support is generally provided through direct government funding. Many countries have special tax arrangements for R&D expenditure, which often provide benefits in the form of tax concessions or credits. Canada, for example, provides a "flat-rate" tax credit of 20% on all eligible R&D expenditure. Other provinces in Canada also provide additional tax incentives, resulting in a dollar of R&D spending only costing between 34 and 50 cents. The US provides an incremental tax credit of 20% for business R&D. In the UK, in addition to the generally available R&D support, the government has established a Foresight Vehicle research program to promote technology and encourage suppliers to develop and demonstrate technologies for future vehicles. To date, the government has committed 100 million pounds. In developing countries, such as Thailand, a 200% tax concession for R&D expenditure is provided. In South Africa support for R&D is available through the Government funded Automotive Industry Development Centre.

In the key area of support for R&D, Australia is lagging behind other developed countries. The level of support provided for R&D - required in order to build its innovation capability and competence - is currently uncompetitive. Following reductions in both the R&D assistance rate and the company tax rate, Australia's investment incentives are less than those offered by developing countries and as many of these are in our region, this creates significant competition for Australia. Accordingly, Australia's position on provision of support relative to all other automotive producing countries must be considered in any policy review.

² The Allen Consulting Group and Deloitte Touche Tohmatsu, Report to FCAI and FAPM - "Benchmarking the Automotive Industry Policy Environment", 2002.

Impediments to Business Investment in Research and Development

Support for research and development in Australia has varied considerably over time.

In its 1995 review of research and development, the Industry Commission found:

*‘...the fundamental rationale for government intervention (to support R&D) remains the “public good” characteristics of knowledge creation —its lack of appropriability and wide applicability — enabling spillovers to society from private investments in R&D’.*³

The Commission also concluded that the tax concession for R&D expenditure by business had brought net benefits to the Australian economy.⁴ However, since the Commission’s report was completed in 1995, the Federal Government has reduced the rate of the R&D tax concession from 150 per cent to 125 per cent and reduced the company tax rate from 36 to 30 per cent (which further reduces the value of the concession, since the concession is provided in the form of tax relief).

Both of these decisions have effectively diluted government support for business R&D. As a consequence the amount of R&D that is conducted by business in Australia and therefore the net economic benefit that business R&D generates for the Australian community may be expected to fall.

In the Productivity Commission’s 2002 Position Paper on the automotive industry, it recognised that the adequacy of generally available assistance was an issue for many.⁵ In addition to the inadequacy of support provided by the general tax concession, concerns were also raised regarding the definition of eligible activity, which excludes much of the necessary process and product development activity undertaken that provides the industry with a competitive advantage. As a result, Holden strongly advocated in its submissions to the Commission the need to include support for R&D for vehicle manufacturers in future assistance schemes (note that the vehicle manufacturers currently only receive R&D support via ACIS for work carried out for others).

In its preliminary findings, the 2002 Productivity Commission’s inquiry commented that:

*“The performance of Australia’s general support measures for R&D should be reviewed within 5 years. Such a review should aim to ensure that there is appropriate general support available for R&D undertaken by Australian industries – including by the automotive industry after the specific support provided through ACIS ceases.”*⁶

³ Industry Commission, *Research and Development, Vol. 1: The Report*, Report No. 44, Australian Government Publishing Service, Canberra, p. 9.

⁴ Industry Commission, *Research and Development, Vol. 1: The Report*, Report No. 44, Australian Government Publishing Service, Canberra, p. 29.

⁵ Review of Automotive Assistance Position Paper”, p 61, Productivity Commission, June 2002

⁶ Review of Automotive Assistance Position Paper”, p 63, Productivity Commission, June 2002

As outlined in earlier sections of this submission, a strong research and development base is a key element of Australia's automotive design and manufacturing capability and Australia's attractiveness as an investment location by automotive companies. It is for this reason that Holden is committed to working with Government to ensure that an appropriate policy environment exists to support the required activity in the automotive sector.

Holden's Commitment to Research and Development

The automotive industry is a vibrant industry adopting new technology and entering R&D programs with the vigor usually associated with IT and telecommunications companies. One of the major trends in the global automotive market is the demand for vehicles incorporating higher levels of technology, which in turn is driving an increase in the level of spending on R&D.

The global automotive industry contributes US\$50billion to R&D, representing 5% of the total turnover. In 1997 the US automotive industry was ranked first of 39 major industry sectors in terms of its R&D expenditure by the US National Science Foundation. In Europe, Germany's automotive expenditure on R&D represented around 30% of the total business expenditure on R&D in 2000 which was an increase from 17% in 1990.⁷

Australia's response to the increasing technical demands of the industry globally, is also to build on our existing capabilities. The automotive industry in Australia is one of the largest contributors to business R&D and wider innovation capability in this country. The Australian automotive industry spends approximately \$400 million/annum on R&D which represents 8% of the total business R&D expenditure and is second only to the mining industry.

The industry's increasing uptake of new technology is helping Australia to create advanced vehicles with global appeal and build presence in markets such as the Middle East. Advanced technology has been a major contributor to this trade success and we have seen increasing sales of vehicles built in Australia which have included technology developments in materials and systems to ensure that the vehicles can withstand the harsh climatic conditions of certain export markets.

To support Holden's volume expansion, continuing investment in R&D and innovative manufacturing facilities is required. Holden's R&D expenditure in 2001 was \$190 million, which was a 27 % increase from \$149 million in 2000. The program included development costs for Holden's new Cross8 sports performance vehicle, work on other forward models, engine development and various safety projects to introduce new technology in future Holden vehicles.

⁷ The Allen Consulting Group and Deloitte Touche Tohmatsu, Report to FCAI and FAPM - "The Automotive Industry's contribution to the Australian Economy: A Modern Perspective", 2002.



Holden's recent investment of \$6million in a state-of-the-art Virtual Reality studio is an example of the commitment of the industry to increasing capabilities in order to remain globally competitive. This facility significantly reduces the time required for vehicle development, which reflects worldwide trends towards simultaneous automotive design, engineering and manufacturing processes.

Recent Holden Case Studies

Holden Monaro

Holden designed and validated the Monaro 'virtually', using Simultaneous Math Based Process (SMBP) technology, considerably reducing turn-around time and expense. The process was heavily reliant on innovative computer modeling activities replacing traditional prototypes. Holden estimates that its investment in this program cost considerably less than a more traditional approach would have required.

Holden's design and engineering team brought the Monaro sports coupe to market in record time by taking advantage of SMBP technology. The virtual reality facility, which was completed after the design of the Monaro had been carried out, has the capacity to reduce lead times even further. Because it enables the vehicle to be assembled 'virtually', Holden design, engineering and manufacturing departments can all begin to utilise design data right from the start of a new vehicle program.

Safety Research

Holden has established a reputation for innovation and leadership in automotive safety research. The company has specialist knowledge of the real-world accident risks and conditions associated with the unique Australian driving environment.

In 1990 Holden instituted a unique field accident research program in conjunction with the Monash University Accident Research Centre (MUARC). With this support and collaboration, MUARC has grown to be a world centre of expertise on real world harm and is sought out by Australian governments and overseas research organisations. Recent field data now shows the risk of harm to Commodore occupants is significantly lower than the Australian fleet average. The high level of safety technology evident in today's Holden Commodore was achieved through multi-million dollar investment in research and development and through the efforts of a dedicated engineering team.

Holden has also initiated one of the most comprehensive research and crash test programs of its kind into the effectiveness of child restraints in Australia. The program was again carried out by Melbourne's Monash University Accident Research Centre (MUARC) and is the first laboratory crash test program undertaken in Australia to study the comparative performances of different types of child restraints in real vehicles.

ECOMmodore

In May 2000 Holden unveiled its leading edge concept vehicle, ECOMmodore. The advanced hybrid-electric powered ECOMmodore was developed jointly by Holden and CSIRO and designed with the emphasis on practicality and achievable technology. It was the first hybrid-electric vehicle to be produced by an Australian automotive manufacturer.

The ECOMmodore is a full-sized family car. Its unique hybrid-electric powertrain, which combines an electric motor powered by supercapacitors and advanced lead-acid batteries with a four-cylinder aluminium alloy petrol engine, delivers the same performance as a standard V6 engine.

ECOMmodore's technologies are specifically targeted at improving overall vehicle efficiency. These include significant mass reduction through the use of advanced lightweight materials, clever aerodynamics, reduced rolling resistance and regenerative braking.

ECOMmodore illustrates the high level of technological innovation that is achievable in Australia incorporating some of the materials, components and manufacturing technologies needed in the future. It provided Holden engineers with a hands-on learning tool to experiment with emerging technologies that will be incorporated into Holden vehicles in coming decades.

Research and Development Policy

Australia as a whole is in urgent need of an efficient but powerful R&D-enabling program.

A strong research and development base is a key element of Australia's automotive design and manufacturing capability and Australia's attractiveness as an investment location by automotive companies. Successful innovation is the only available route by which the local vehicle industry can win back market territory lost to imported vehicles in (for example) the growing "4x4" and "people mover" classes.

In Holden's case our intent is to develop highly innovative vehicles that create new segments for the Australian domestic market (with the benefits of import replacement) and provide strong export opportunities. However, before undertaking any R&D project it must be assessed on its business case merits. In many cases highly innovative programs are unable to pass the business case hurdles due to the lack of financial support for R&D.

Holden's strategic business direction identifies a rare opportunity to enter major new export markets in the latter part of this decade, through the provision of products of types not previously manufactured in Australia. In some cases, there does not appear to be an equivalent product concept in production anywhere in the world. To pursue these concepts would require exceptionally "high risk" R&D activity, and at present the

business case for carrying out the activity is considered less than viable. However, an appropriately tailored scheme would enable the products to be developed – and would help turn around the business case.

The Effectiveness of the R&D Tax Concession Scheme

The R&D tax concession is available to all Australian companies and has supported the development of numerous new model and manufacturing process improvements in the automotive industry since 1988/89. The R&D Tax Concession is the principal funding mechanism used by Holden to offset its considerable investment in R&D. The scheme is important and is delivering benefits to Holden, the industry and the Australian economy. However the impact of the benefit is insufficient to enable decisions to invest in very high risk R&D and thereby to foster the transformation that the motor vehicle industry needs to make in the current decade.

The tax concession scheme provides two forms of concession:

- a tax deduction on relevant expenditure of 125 per cent (versus the normal 100 for most other forms of legitimate business expense); and
- a tax deduction of 175 per cent on incremental expenditure above a three year moving average.

The base concession (the 125 per cent deduction) only provides a subsidy of 25 per cent times the corporate tax rate of 30 per cent, or a net benefit of 7.5 per cent of the eligible expenditure. Such a low rate of assistance would obviously be more relevant to projects of low risk than of high risk. If for example a project only had a 5% risk of failure the subsidy would exceed the "expected value" of the cost of failure – that is, 5%. If on the other hand a project had only a 50% probability of success the assistance level of 7.5% compares very poorly with the "expected value" of loss, which would be 50% of project costs.

With regard to the 175 per cent rate of deductibility, we note that this higher rate only applies to incremental expense above a base level. As a result, for an industry like automotive manufacturing, which has a very high, steady rate of R&D expenditure, this concession is of little relevance. On the other hand the 175 per cent rate might be of major influence on project decisions in an industry with a low base level of R&D spending, interrupted by intermittent high "spikes" of expenditure. Unfortunately, the automotive industry is not in this situation.

Administration of the R&D Tax Concession

The compliance effort required to support tax concession claims is very exacting and requires significant engineering resources. The lack of incentive provided by the low return of 7.5 per cent is compounded by the costs associated with the on-going compliance for the program. It is Holden's view that there should be a balance between the level of assistance provided by a scheme, and the cost of compliance with it. The R&D scheme offers a low (7.5%) level of assistance, and should accordingly be designed to have a very low cost of compliance so that the ratio of assistance to compliance cost can be at a high level. This desirable state is not fully achieved at present.

The absence of a statute of limitations requires "evidence of compliance" material to be maintained into perpetuity with unextinguished exposures shadowing current eligibility and investment decisions. At any time full audits of past claims can be made throughout the lifetime of the program. In addition, administering organisations (ATO and DITR) are able to make rulings that can effectively invalidate claims stretching back 10 or more years. Like the previously mentioned high "primary" cost of compliance, this secondary cost of compliance erodes the efficiency of the scheme by consuming a measurable proportion of the fairly modest benefits.

What is required is a more progressive scheme that accepts a realistic statute of limitations for claims and works cooperatively with industry to ensure funding for R&D projects can be more readily obtained.

Research and Development Grants

While discretionary R&D Start grants are now available to major companies, it is our experience that these are difficult to access even where vehicle concepts new to Australian automotive manufacturers are being considered, for example Holden's cross-over AWD vehicle. The grants are 'needs' based and accordingly impossible for successful enterprises to access. While we support the concept of specific assistance for R&D investment by smaller enterprises, it is important to be aware that such schemes are not relevant to the larger investors in R&D such as Holden.

In reviewing business commitment to R&D we believe that this inquiry should address these issues relating to the existing R&D support mechanisms. Strong support for increased innovation and investment in new products and capability will be critical to the automotive industry's growth prospects in the future.

Future R&D Policy Recommendations

As has been set out above, Holden's strategic business direction identifies a rare opportunity to enter major new export markets in the latter part of this decade, through the provision of products of types not previously manufactured in Australia. In some cases, there does not appear to be an equivalent product concept in production anywhere in the world. To pursue these concepts would require exceptionally "high risk" R&D activity, and at present the business case for carrying out the activity is considered less than viable. However, an appropriately tailored R&D program would enable the products to be developed – and would help turn around the business case.

As discussed, although the automotive industry has access to a generally available R&D Tax Concession scheme, the rewards provided are modest. Successful innovation is the only available route by which the Australian automotive manufacturers can win back market territory lost to imported vehicles in (for example) the growing "4x4" and "people mover" classes. The intent is for Australian manufacturers to develop highly innovative vehicles that create new segments for the Australian domestic market (with the benefits of import replacement) and highlight strong export opportunities.

It is recommended that future R&D policy must therefore consider the following:

- To encourage investment in the necessary high risk R&D to ensure long term viability of the automotive industry, a mechanism for encouraging such activity could be provided as a graduated subsidy based on the level of innovation.
- Holden believes that reform of current R&D assistance mechanisms is required to ensure that at least some aspects are closely targeted at highly innovative R&D and that they are accessible by the automotive industry. In a graduated scheme, for example, to qualify for the first assistance rate it should be directed, as it is today, toward the development associated with a "like-for-like" vehicle replacement. A vehicle of a type not previously made in Australia - and therefore addressing a market segment currently dominated by imports - should qualify for an improved assistance rate. A vehicle of a type not previously made anywhere in the world, should qualify for an even higher rate of R&D assistance.
- In our view it is especially important to support R&D in cases where Australia gains from the downstream effects (car and component manufacture) as well as accruing the direct gains from the R&D activity itself.
- Credit also needs to be given for concept development as well as product development. To assist in reducing the risk of investing in highly innovative R&D initiatives, the scheme should also provide credits for the costs of market determination/market research to ensure adequate understanding of the potential opportunities.

Enhanced support for R&D in Australia will complement and support the broader policy objective of making Australia's economy more knowledge-intensive. Given the strong spillovers from the automotive sector to multiple other sectors of the economy, it is reasonable to suggest that a stronger automotive R&D activity would be a powerful driver of additional technology-creation across the broader economy. In this regard,



adequate reward for high levels of innovation and technical risk is a necessary feature of any future Australian R&D program. At the same time, in order to protect the revenue it is desirable that access to highly assisted support measures be restricted to projects that are fully developed and are strongly backed by organisations capable of putting them into volume production. Only through innovation in both products and processes can the Australian automotive industry hope to claw back domestic market in the growing 4WD segment and find crucial new export niches to develop. Holden recognises that a multi-level assistance regime, such as that proposed above, will involve more administrative burden than a simple scheme. However, we are proposing that the scheme would also offer a much higher level of support than the present R&D scheme, so that the administrative cost of compliance would constitute a small proportion of the total funding involved. In our view the multi-level feature is well justified by its superior capacity to deliver a highly effective response.