**UNREVISED HANSARD**

**MINI PLENARY - NATIONAL ASSEMBLY TUESDAY, 18 MAY 2021**

**VOTE NO 35 – SCIENCE AND INNOVATION**

**PROCEEDINGS OF MINI-PLENARY SESSION-NATIONAL ASSEMBLY**

Members of the mini-plenary session met on the virtual platform at 16:30

House Chairperson Mr C T Frolick took the Chair and requested members to observe a moment of silence for prayer or meditation.

**(Announcement)**

The HOUSE CHAIRPERSON (Mr C T Frolick): Thank you, hon members, before I proceed, I would like to remind you that the virtual mini-plenary is deemed to be in the precinct of Parliament and thus constitutes a meeting of the National Assembly for debating purposes only. In addition to the rules of virtual sitting, the Rules of the National Assembly, including the rules of debate apply. Members enjoy the same powers and privileges that apply in a sitting of the National

Assembly. Members should equally note that anything said in the virtual platform is deemed to have been said in the House and may be ruled upon. All members who were logged in shall considered to be present, and are requested to mute their microphones and only unmute when they are recognised to speak. This is because the mics are very sensitive and any noise will be picked up and it may disturb the order of proceedings, and also the ability of members to follow the debate. When recognised to speak, please unmute your microphone and connect your video members may make use of icons on the bar, the bottom of the screens, which has an option that allows a member to put up his or her hand to raise a point of order.

The secretariat will assist in alerting me when members are requesting to speak. When using the virtual platform, members are urged to refrain or desist from unnecessary points of order or interjections. We shall now proceed to the order. which is debate on Vote No 35, Science and Innovation Appropriation Bill.

**APPROPRIATION BILL**

Debate on Vote No 35 - Science and Innovation 16:30

The MINISTER OF HIGHER EDUCATION, SCIENCE AND INNOVATION: Hon

House Chairperson, Mr Frolick, hon Members of Parliament, Cabinet colleagues who are present, our Deputy Minister of Higher Education, Science and Innovation, hon Buti Manamela, members of the Portfolio Committee on Higher Education, Science and Technology, led by its hon Chairperson Mr Philly Mapulane, the Director-General of the Department, Dr Phil Mjwarha, officials of the Department of Science and Technology, my special advisors and Ministry team, chairpersons and CEOs of our entities, invited guests, ladies and gentlemen, this marks our third budget vote of the sixth democratic Parliament. I am pleased to inform the House that the Cabinet recently approved our draft Decadal Plan for the process to finalise a Decadal Plan for Science, Technology and Innovation, STI, as we call it, so that we drive a government wide, including broader societal agenda of our national system of innovation.

The Decadal Plan is premised on advancing and whole of government approach and ultimately a whole of society approach to innovation in South Africa, like the rest of government and our society in general, our national system of innovation has been affected by COVID-19 pandemic. This pandemic has changed

life as we know it, but it has also taught us some important lessons. One of the lessons is that investing in science is vital for South Africa’s future and its development, especially investing in science, and during the period of a pandemic. Our science and innovation investments made in the past decades led to us building expertise, infrastructure and research capacity needed in our response to when diseases strike. Much as our budget is not adequate at all. This was demonstrated when our national system of innovation leveraged our response to this COVID-19 pandemic. Collectively, we were able to respond to COVID-19 in a joint effort that would have made DS Charlotte Maxeke, whose 150th anniversary we celebrated this year, very proud, as a BSc Graduate from the United States itself in her own times.

These investments and the talent brought into our national system of innovation, led our country to produce premier science that is not only assisting us locally, but also contributing to the global body of knowledge on COVID-19. I am proud, hon Chair and hon members, to say that our infrastructure in response to COVID-19 include the following: The KwaZulu-Natal research, innovation and sequencing platform called Crisp, which so local scientists lead investigations

into the evolutionary characteristics of the virus, and detected a new variants dubbed 501Y V2. Also the centre for proteomic and genomic research, and thirdly, the South African biodiversity institute, whose research and development portfolio includes pathogen genomics and the skills needed in the areas of vaccine, biochemistry, microbiology, genetics, among others.

We also established an indigenous knowledge base research team that is investigating seven mono-herbal and two multiherbal medicine formulations with potential relevance to COVID-19.

*IsiZulu:*

Asizikhohliwe izinyanga zakithi ukuthi zibheke nemithi le eziyisebenzisayo ukuthi akukho yini lapho singathola khona ikhambi lokubhekana nale nkinga esibhekene nayo njengamanje.

*English:*

We are also collaborating with the North West University to raise public awareness on the Protection, Promotion, Development and Management of Indigenous Knowledge Act. Other interventions were made include data modelling. We are very proud of this through what we call the CMORE situation

awareness platform developed by our Council for Scientific and Industrial Research for COVID-19. This data modelling system provides close to real-time data analytics on the coronavirus outbreak per province, district municipality and ward. In other words, through this system you can zoom into any ward the country and be able to see the pattern of the virus.

We have also invested in the South African population research infrastructure network, SAPRIN, random sample of households’ research, to document the knowledge behave and outcomes of these households in relation to nine pharmaceutical COVID-19 measures. The Human Sciences Research Council, surveys to measure the public response to COVID-19, and the effects of lockdown as well as the South African radio astronomy observatory, ... national project, which you were doing, together with the Department of Trade, Industry and Competition, and the deployment of hydrogen fuel cell systems in hospitals and medical facilities for energy generation.

These infrastructure networks and investments were instrumental in allowing our government to respond quickly and effectively in managing the coronavirus outbreak. They also demonstrated our world-class competence in identifying

variants and keeping science at the foundation and the forefront of government decision-making.

The Cabinet has approved the strategy of DSI to drive a multipronged national vaccine production and development strategy to secure our nations, long-term ... preparedness. In this regard, our Department of Science and Innovation is working closely with Biovac, in which the state has 47% shareholdership in this company, to increase the scope of public participation and leveraging capital investment by domestic private and international vaccine players to build South Africa’s vaccine production resilience.

Through this, we hope to build strong partnerships with China, Russia and other Brics partners, as well as European and North American partners, including Cuba, which is very advanced when it comes to biochemistry and other related disciplines. We are particularly pleased that the commitment of expatriates, most notably Dr Patrick Soon-Shiong a farmer Graduate of Wits University to invest in our nation’s, future pandemics security.

We have also developed the innovation strategy in support of our country’s Economic Reconstruction and Recovery Plan as announced by our President last year. The strategy repositions our department to promote new knowledge, production and innovation, directly supportive of strategic aims of the Reconstruction and Recovery Programme. In order support our human resources development drive, through the national research foundation, we have awarded at least 3 000 research grants, two researchers based at various research performing institutions in our country. These include grants earmarked to support emerging and established researchers through various programmes such as Thuthuka, the new generation of academic’s program, the national research foundation rated researchers, established and unrated researchers as well as South African research chess initiative and the centres of excellence.

We have also made good progress in the development of the hydrogen society roadmap. Hydrogen South Africa, recently completed its second five-year review, ... which identified opportunities that would assist in the commercialisation ...

The HOUSE CHAIRPERSON (Mr C T Frolick): Switch off your microphone please! Hon members, please ensure that when you

joined the platform your microphones are switched off, you are causing an unnecessary disturbance when proceedings are underway. The hon Minister, you may continue.

The MINISTER OF HIGHER EDUCATION, SCIENCE AND INNOVATION: Hon

Chair, I was saying that hydrogen South Africa recently completed its second five-year review, which identified opportunities that would assist in promoting the commercialisation of locally developed intellectual property in strategic markets, as well as attracting higher levels of participation from local, small and medium-enterprises. Recent announcements that Toyota and Sasol are now ready to manufacture fuel cell powered cars, is testament to our department’s hard work to ensure our full participation in the planned Platinum Valley industrial projects, which will cover a region stretching from Anglo American’s Mogalakwena Platinum Mine near Mokopane to Johannesburg and Durban. Through the Agricultural Bioeconomy Innovation Partnership Programme, ABIPP, we continue to support a number of platforms and multistake, government industry consortia that include the Wheat Breeding Platform, the Plant Health Consortium, the Climate Resilience Consortium, the wet carcass syndrome study and the two new agro-processing projects for Cape aloe and

maize. In terms of skills development and transformation, our agricultural by innovation partnership programme supported black Master’s and PHD’s students and technicians, as well as black emerging farmers.

Hon Chairperson and members, the SA National Space Agency, SANSA, remains the pride of our nation. South Africa through SANSA has been selected as one of two International Civil Aviation Organisation, ICAO, designated regional space weather centres. The ICAO is the International UN Agency for Aviation. By 2024, we are therefore expected to ensure a fully operational space weather capability that meets the ICAO requirements, as well as advanced research capabilities in the space weather field.

We are also funding the space propulsion programme, which is the aerospace research group based at the University of KwaZulu-Natal. The University of KwaZulu-Natal is currently the only South African University pursuing an applied rocket propulsion, producing graduates with skills that are sorely needed in advanced manufacturing, aerospace systems design and computational analysis. The programme currently has 19 registered postgraduate students, six PHD’s and 13 Master’s.

In order to address challenges of ocean governance, as identified by operation Phakisa, the Cape Peninsula University of Technology, through funding from our Department of Science and Innovation, is leading a consortium that will develop a constellation of low-cost nanosatellites to facilitate South African Marine Domain Awareness, an important dimension of the oceans economy. We have awarded the infrastructure tender for the MeerKAT extension to develop the necessary infrastructure in the Square Kilometer Array site for the 20 dishes that are to be added to the MeerKAT telescope to extend its research area reach. The tender of approximately R870 million includes digging and the rollout of fibre and electrical cables to the dishes. This development, hon Chair and hon members, will further boost job creation for locals in the area, and expand research and innovation opportunities for more science and engineering post graduates and professionals in future years. The MeerKAT will further be integrated into the Square Kilometre Array, phase one, with an additional 133 antennas in the Karoo up to 80 km from the core to make it a 197 dish array mid-frequency telescope. This expansion is a partnership between South Africa, Germany and Italy.

We have also finalised a Memorandum of Agreement on the establishment of the Square Kilometre Array Exploratorium in Carnarvon. The envisaged R60 million multipurpose science tourism visitors centre will create jobs, boost tourism in the area and serve as a science outreach hub for local schools and communities. After a delay in the ratification of the SKA Observatory Convention by some members due to the COVID-19 pandemic, the SKA Observatory has been formally established, paving the way for the international partnership to decide on the start of SKA construction.

Hon Chair and members, close to €700 million worth of contracts for the construction of the SKA will be awarded to companies and providers in the SKA member countries, providing a substantial return on investment for those countries.

Spinoffs are also expected to emerge from work to design, build the SKA with start-ups already being created out of some of the design work. Hon Chair, in partnership with the European Union, we will implement the viability and validation of innovations for service delivery programme to demonstrate pilot and evaluate technologies and innovations that can improve the performance and functioning of municipalities to deliver basic services.

*IsiZulu:*

Ngalokhu sifuna ukukhombisa ukuthi ulwazi nobuchwepheshe esithi isayensi bubalulekile ekuthuthukiseni omasipala bakithi, ikakhulukazi omasipala ababhekene nengwadla yendlala nokuthi bathuthukise izinsiza ezilethwa ebantwini.

*English:*

As a department, we are deliberately targeting women and youth initiatives in order to broaden their participation in the economy. We are currently working with the South African Mobile Devices, Distributors and Repairers Association, and Industry Organisation for the repair and distribution of electronic communication devices. The Media, Information and Communication Technologies Sector, Education and Training, Authority, MICTSETA, is training 80 technicians in cellphone repair, which will enable them to operate from their areas of origin, mostly townships and peri-urban areas. I also intend bringing the wholesale and retail Seta as a partner in this project.

*IsiZulu*:

Sikhathele ukuthi omakhalekhukhwini bethu namanje basakhandwa emadolobheni. Sifuna bakhandwe emalokishini nasezindaweni

zasemakhaya. Siqeqeshe intsha yakithi engasebenzi ukuthi ikwazi ukukhanda omakhalekhukhwini, ngoba namhlanje akekho umuntu ongenawo umakhalekhukhwini odinga ukuthi ahlale akhandiwe.

*English:*

The Solar Turtle kiosk concept, which aims to give women and the youth the opportunity to run green enterprises will be used as repair centres or workshops in areas where there are physical space challenges. The DSI is supporting the national pathway management network as part of the Presidential Youth Employment Intervention. Our main contribution so far has been our facilitation of the development of a youth services platform led by the MLab, which is an important contributor to enabling youth participation in innovation. I am delighted also to report that our joint funding and implementation of the South African Mining Extraction, Research, Development and Innovation programme is in full swing. We have developed a three dimensional atlas of South African gold and platinum group metals. Last year, we also launched technology availability and readiness atlas portal to provide the mining industry with access to the capabilities and offerings of local mining original equipment manufacturers.

Hon Chair and hon members, as a department we remain committed to increasing the spatial footprint of innovation through our technology stations programmes. These stations have stronger links to technical and vocational education and training colleges, TVETs. This will bring into reality the announcement I made about a year ago that I am determined and I intend funding and supporting innovation in our TVET colleges.

We are also expanding the rural living labs concept in each province in this current and 2022 financial year. These labs will expand programmes aimed at equipping young people with 21st century digital skills for employment, supporting grassroots innovators to develop solutions that will help resolve some of the community challenges. We also want to position the national integrated cyber infrastructure system funded by our department, to play a major role in the postCOVID recovery processes by enabling greater uptake and infusion of high performance computing in industry, especially for small, medium and micro-enterprises, SMMEs.

*IsiZulu:*

Osomabhizinisi abancane nabo kufanele kufanele bakwazi ukusebenzisa amakhompyutha manje nezindlela ezinye eziphambili ukuqhuba amabhizinisi abo.

*English:*

I can confirm that our department, in partnership with the Department of Communications and Digital Technologies, working with Minister Stella Ndabeni Abrahams. We have now established the world Economic Forum Centre for the Fourth Industrial Revolution operational, one of the only two on the African continent. However, we have to postpone the inaugural summit as a result of the COVID-19 pandemic. Our department also continues to advance African partnerships in science, technology and innovation, both with bilateral partners and within the framework of the African Union, AU, and the Southern African Development Community, SADC.

One of our major successes in 2020 was the establishment of the COVID-19 Africa Rapid Grant Fund led by South Africa. This is being managed by the National Research Foundation and is supporting 80 science projects in 17 African countries. As a department will also continue with our preparations to host the World Science Forum, which aims to promote and celebrate

international solidarity in science. All the work mentioned and others which I did not mention in this budget vote speech, will be supported by the budget appropriation of R8,9 billion which includes allocations to our agencies. Indeed, much-more resources are needed in order to increase investment into research and development. So, we increase from the current 0,81% of the gross domestic product, GDP, of the target of 1, 5% as contained in our National Development Plan, NDP.

As I conclude, I would like to thank our hon President Cyril Ramaphosa, the Deputy President, my Cabinet colleagues, our Deputy Minister Manamela, the chairperson, and members of the portfolio committee for their support and guidance. Gratitude also goes to my wife, Nompumelelo, my staff in the Ministry and to the Director-General, Dr Philly Mjwara, my advisers and the entire executive management committee and staff of the department, the boards and executives of our entities, and everybody who contributed towards the achievement of our mandate as the department.

*IsiZulu*:

Sifuna ukukusho kuqine lokhu ukuthi uLwazi noBuchwepheshe budlala indawo enkulu ekutheni silwe nezifo esibhekene nazo,

sithuthukise umnotho wethu, sandise amathuba osomabhizinisi abancane, entsheni yakithi kanye nabesimame. Siyi lo Mnyango sizimisele ukusebenza nawo wonke umphakathi ukuze senze ubuchwepheshe benze impilo yabantu baseNingizimu Afrika ibengcono. Njengokwesethembiso saloHulumeni oholwa uKhongolose.

*English:*

With these words, then I table the budget and request that it be supported for the Department of Science and Innovation 2021-22. Thank you very much, hon Chair.

Mr M P MAPULANE: Hon Chairperson, Mr Frolick, hon Minister Nzimande, Deputy Minister, hon Manamela, hon members of the portfolio committee and all Members of Parliament, fellow South African, it was Neil Degrasse Tyson an American Atrophies, planetary scientist and author who remarked that and I quote, “The good thing about science is that it’s true whether or not you believe in it.” This simple but profound articulation by Neil Tyson reinforces the significant role an importance that science, technology and innovation plays in our lives. Science as a base is always true whether you believe it or not. It is relevant.

Hon Chair, 2020 was a devastating and an extremely difficult year for the entire humanity. The South African economy was not spared the ravages of COVID-19. When it hit our shores the economy was not performing at its optimal level. In fact, South Africa was already experiencing a recession.

The measures implemented by government in particular hard lockdown in order to save lives and livelihoods further compounded the situation. The COVID-19 pandemic more other recent crisis, has emphasised the importance of science, technology and innovation to both prepare for and react to future crisis. The pandemic elicited an unprecedented deployment of the global science, technology and innovation, STI, community.

Furthermore, digital technologies played a pivotal role in ensuring that certain businesses and Parliament in particular, maintain their operations and their businesses. It enabled parts of the economy and society to continue working thereby alleviating some of the negative impacts of the pandemic.

The Department of Higher Education, Science and Innovation and in fact the whole of the South African system of innovation

have and continue to make significant contributions to combating and mitigating the impacts of COVID-19. These actions and efforts were only possible because South Africa’s historical investment in building STI capability.

It was these capabilities that could be immediately be mobilised to among others enhanced South Africa’s ability to test for COVID-19, monitor and track the rates of infections, ensure that we participate in global efforts to develop a vaccine, direct efforts to investigate prophylactic measures based on indigenous knowledge, assess the public’s attitude too and perceptions to the virus and the measures instituted to mitigate its effects and locally develop and manufacture ventilators.

More recently, our genomic surveillance programme led to South Africa discovering the first variant of COVID-19 which sensitised the global scientific community to how this virus mutates. For these efforts and ongoing sterling work, our STI community deserves the nations praise and appreciation.

Consistent with President Ramaphosa’s of the overriding

priorities of the 2020-21 in the last year state of the nation

address, South Africa has the unique opportunity to address the long-term structural deficiencies of its economy and place it on a new path to growth and job creation.

Science, technology and innovation, is central to building this new economy and the department through its strategic outcomes comprehensively supports the priorities identified recently in the SA Economic Reconstruction and Recovery Plan.

In this regard continued long-term investment research development innovation in South Africa over the years, will be leveraged to contribute to economic recovery in three areas.

These are, firstly, research, development and innovation, RDI, to revitalise and modernise existing industries and sectors.

Secondly, RDI that creates new sources of growth and stimulates research and development, led industrial development and lastly, RDI in support of a capable developmental states.

The key sectors that would be supported mainly through the supporting sectors masterplan include agriculture, mining, mineral beneficiation and manufacturing.

The department’s budget allocation increases from R7,3 billion in the 2020-21 financial year, to R8,9 billion in the 2021- 2022 financial year. This represents when adjusted for inflation, a real increase of 17,8% and seem to restore funding commitments to 2020 levels which was a total allocation of R8,8 billion before the two adjustment budgets. The 2021-2022 allocations ensure a strong focus on innovation activities.

The department’s key cost-drivers is transfers and subsidies to its entities, universities and other research performing institutions. In 2021-22 this totals R8,4 billion and represent 93,6% of the department’s total budget. Transfers and subsidies totals R6,8 billion in the previous financial year.

Furthermore, over the medium-term the department has set aside R5,3 billion to scale up interventions supporting the local production of the ventilators, Nano satellites, hydrogen fuel cell technologies, renewable energy RND and pilot projects such as the KwaZulu-Natal Research Innovation and Sequencing platform which is part of the national genomic surveillance program.

Notable changes in allocation to transfers and subsidies include the allocation of innovation project research which increases from R171,4 million to R503,3 million. This allocation supports innovation activities and aims to increase commercialise and use publicly funded Intellectual Property IP.

The allocation of science awareness and initiatives to encourage youth participation in science increases from R33,5 million to R91,6 million.

The allocation for the Square Kilometre Aray capital contribution to research increases from R456,6 million to R802,4 million. This is driven by the additional 20 antennae that will be added to the MeerKAT. The allocation for the Council for Scientific and Industrial Research, CSIR, mining and RND increases from R41,7 to R63,5 million. The allocation to CSIR Cyberinfrastructure RND increases from R60,2 million to R272,1 million. This is the next tranche of funding as the National Integrated Cyberinfrastructure System which is allocated R3,6 billion over the medium-term.

Hon Chairperson, the approval by Cabinet on 24 March 2021, of the Draft Science Technology and Innovation Decadal Plan which serves as the implementation plan for the 2019 Science, Technology and Innovation White Paper is a significant development for the national system of innovation. The approval of the Draft Decadal Plan enables the Minister of Higher Education, Science and Innovation and the department to begin consultations with those Minister’s and departments whose portfolios are STI intensive.

The Draft Decadal plan sets the basis to ensure that there is a comprehensive approach to and mainstreaming of STI across all government operations. Furthermore, Cabinet approval of the Draft Decadal Plan allow certain provision of the White Paper to comments. These includes that the President of the Republic can now convene for the first time in history.

The annual STI planeray, a stakeholder body which seeks to maintain and mainstream STI across all government departments, the private sector and civil society. The President can also now appoint and lead an Interministerial Cabinet Committee on STI which will be responsible for overseeing the implementation of the decadal plan.

It is hoped that these measures will improve the co-ordination of the National Systems of Innovation, NSI, and enhance in certain percentages in 2018-2019 which is eight basis points lower than the 0,83% recorded in 2017-2018.

It is hoped that the framework set by the decadal plan to ensure a whole of government approach to innovation and mainstreaming STI across government will boost the efforts to increase national investment in STI.

The second key concern of the portfolio committee is the slow pace of transformation within the national system of innovation. This area of transformation is mainly hampered by the limited resources, poor education outcomes in mathematics and science and the small size of our science system.

In this regard we note a new postgraduate funding policy which covers the full cost of study to afford students financial security to continue and finish their degrees as implemented by the department in 2020, as a measure to accelerate transformation of the NSI. However, this has resulted in fewer students being supported.

Along with postgraduate funding policy, the department has developed and is implementing a new transformation framework that considers transformation in six dimensions. It is hoped that these initiatives will bring about real change and the committee will be overseeing this very closely.

Additionally, the committee is concerned about the inadequate and declining levels in real terms of the parliamentary grant allocated to the entire science and innovation portfolio which is a serious concern. This affects skills development and retention, research and innovation outputs, the ability to develop and enhance STI capability and maintain and acquire infrastructure.

The committee recommends that urgent attention be given to the funding models of science councils. Furthermore, the procurement regulations imposed by the Public Finance Management Act makes it difficult for the science councils to secure contract income from the public sector. The science council depend on this income to ensure there are sustainability and execution of the public service mandate. We urge the National Treasury to give due consideration to this matter.

In conclusion Chair, the pandemic has highlighted the critical need to ensure that STI policy direct RDI efforts towards achieving the socioeconomic and environmental sustainability, inclusivity and resilience. Hence the resurgent thought that advocates that science, technology and innovation should be considered as an investment and not merely as an expenditure item against the national fiscus which should receive urgent attention. The ANC support the adoption of this budget, hon Chair. I thank you.

Dr A LOTRIET: Hon House Chairperson, I served on the Portfolio Committee on Science and Technology during the Fifth parliament, and in preparing for this budget speech, I went back to my last speech on SMT, and that was in 2018. It is very interesting that the hon Chairperson of the portfolio committee, the hon Mapulane also quote the astrophysicist new Neil deGrasse Tyson. I ended my speech with the following quote:’ innovations and science and technology are the engines of the 25th century economy. If you care about the wealth and the health of your nation tomorrow, then you better rethink how you allocate taxes to fund science.

I think we have to look at where we are in 2021. The world and the country are experiencing one of the worst pandemics in recent history. All across the world and in South Africa, the immediate reaction was, “What do the scientist say?” “How can science help us” Internationally there was a scramble for getting vaccines developed at unprecedented speed. Medical practitioners, medical staff and scientists were and are still at the forefront in helping us fight this pandemic. They are the heroes.

At the same time that we fight against the COVID-19 pandemic, the world also faces the ever-increasing challenge of climate change. Climate change is not going to magically disappear, it needs research; it needs science and it needs innovation as a matter of urgency and with great speed there is no time to waste. We are becoming increasingly aware and subjected to the reality of water shortages. It is not the kind of shortages as a result of poor service delivery in many of our municipalities, but the very real danger of our water resources diminishing due to climate change. But we need scientists to conduct research and innovators to provide us with the solutions for science and innovation.

However, science is still treated as the Cinderella. It is still viewed as a nice to have and something we do on the periphery. The golden thread that runs through the department and its entities presentations has lot of uncertainties of financial sustainability. Income loses are a reality that could impact their core functions. It is becoming increasingly more difficult for entities to reach their targets due to inadequate resources, especially human resources. It is also important to note that a reduction in the research budget results in researchers having to rely more and more on outside contract research. This does keep research alive but the focus area is determined by the sponsor. At this point we need local research focused on local real issues.

Minister, it is all good and well that the department decadent plans have been approved by government, but this should be accompanied by realistic and a feasible budget. I think the science and innovation community should know whether you put up a fight for science and innovation in cabinet and with the Minister of Finance. Did you point out that science and innovation is at the centre of all progress and development be it social or economic, and that science and innovation will play a key role in our economic recovery after the pandemic.

Did you fight for science or did you rather support bail outs for failing state-owned entities, SOEs? A strong, lively and viable science and innovation sector would be crucial to create an environment that would attract investment we so dearly need.

This is a department that needs all the support it can get. Year after year we praise and congratulate the department for the extraordinary work that they do. Minister you have done that today; you have given us a list of all the achievements – all the interventions, and we applaud the department and its entities. You have even said that they are punching above their weight, but Minister, it shouldn’t be like that. This department should be adequately funded. Year after year we see a budget not really improving, but in fact declining. And the department even had to make plans when there was a blanket across the board budget cuts. Surely, that shows that science is not the government’s priority.

Minister, what have you done to ensure that the research done by the department and its entities are taken up by your fellow Ministers? Why is there such a low uptake? It is indeed very important that you mention that there is going to be this

collaboration, but we need much more than forum here and a commission there. Science and innovation should be at the centre of all planning – of planning on how to deal with South Africa’s challenges.

These are matters that have to be addressed as a matter of urgency. Science and innovation can no longer be neglected. It has to be on the forefront as we navigate the changing world around us. Future generations depend on our actions now. Thank you.

Mr S TAMBO: Hon House Chairperson, I will be leaving my video off as a result of bandwidth. My apologies. Hon Chair, we must state firmly that the EFF rejects this budget. It is our ... [Inaudible.] ... view that it is an end product of an ... [Inaudible.] ... department with no vision to leverage science and research to serve a ... [Inaudible.] ... mandate so that the department ... [Inaudible.] ... is to ensure ... [Inaudible.] ... research and development. Yet, the bedrock of economic policy in this country reveals a concerning poverty in terms of understanding how a developmental economy ought to be run.

One cannot claim to have a desire to utilise science and innovation to develop the economy, yet all indicators reveal an economic planning that is based on a dependency on foreign direct investment and austerity. There is nothing about the policy of this government that shows any meaningful investment in innovative sciences. It is a regime that has chosen to outsource all developmental policy to Investec and the global network of capital, making us a nation that permanently waits for donations, a failure that has become much clearer during this pandemic.

It is a department that is deliberately out of sync with objective reality or one that simply takes South Africans for fools because what it claims it wants to achieve is the opposite of what is happening in terms of how the state is run. The foolish claim that one of the supposed three pillars of the 2019-24 Medium-Term Strategic Framework is to build a more capable state ... is misleading and naive. It is foolish because while they lay down such an objective, the chief executive officers of state-owned enterprises, SOEs, in this country, such as Eskom and SA Airways, canvassed a perspective of privatising state-owned aviation and energy generation respectively.

While this department sits on its hands and boasts about the establishment of numerous task teams that we can no longer keep track of, Airports Company SA, ACSA, has resolved to ... [Inaudible.] ... it defines as noncore assets and the South African health practitioner’s association operates with imperialist procurement policy in terms of vaccines.

To talk of the failure of vaccine efforts would be to actively look for ... [Inaudible.] ... as we are vulnerable today because of this department’s impotence in innovative sciences. While this department claims its science and innovation efforts must be mainstreamed across all ... [Inaudible.] ... of governance, South Africa regresses into reactionary policy, leaving us to wonder whether they make any contribution to policy development at Cabinet level.

It is the EFF that, in the portfolio committee, has raised that this department seemingly exists to speak to itself because all relevant entities conceded that they play no meaningful role in economic policy development and are postured towards SOEs.

The mandate for policy has been surrendered to the private sector and this becomes more apparent by day. But perhaps let us display how, even if the department were to be saved from its obscure position in policy contribution, their contributions would remain insignificant.

While the country grapples with levels of unemployment that would lead to civil war in any other nation, this department seeks to create jobs and transform the economy through a meagre 1,1% increase in GDP investment through expenditure on research and development. This is supposedly to make us competitive through information and communications technology, ICT, adoption.

The bubble that the department exists in is further displayed when alluding to their second key priority, being education, skills and health. Just last week we debated the Higher Education budget in which we revealed that R6,8 billion will be cut from the National Student Financial Aid Scheme, NSFAS, and over R900 million will be cut from technical and vocational education and training, TVET, infrastructure grants. These cuts will significantly impact access to higher education, with the department conceding that this means that

enrolments in the sector will have to be decreased. Despite this, the Department for Science and Innovation seems to have as a priority expanding access to post-higher education.

Despite the higher education sector that has withheld the qualifications of over 106 000 graduates and continues to financially exclude thousands from education because of money, this department somehow has a pipedream priority of increasing black lecturers.

There is seemingly no grasp of cause and consequence, which is why they speak outside the realm of reality. There is no understanding that the medium-term budget cut of R1,7 billion makes any objective centering on science and innovation in job creation and industrialisation, unworkable.

The decrease from R16,8 million to R6,6 million and thereafter R6,8 million to the National Research Foundation for research and development in Indigenous Knowledge Systems reveals a government not willing to invest in developing internal capacity, in knowledge production, research and innovation.

*IsiZulu:*

Nizikhohliwe izinyanga zakithi, Komanisi.

*English*:

This is an indicator of a self-hating commitment to imperialism. Instead of prioritising local developmental initiatives, the department has chosen to increase allocation of the budget to travel, subsistence, venues and facilities, instead of increasing ICT capacity to ensure that international co-operation occurs through the use of economically conservative systems. We are excited to be tourists rather than to allocate funds sensibly for developmental purposes.

To close ... [Inaudible.] ... that is telling of this government’s lack of commitment to create dependable African innovation and science initiatives, the allocation to technology localisation, beneficiation and advanced manufacturing has decreased by R92,1 million and this is the crux of the rat-minded approach to development in this country. Without localised development, massive inward industrialisation, the establishment of quality pharmaceutical capacity and the centering of SOEs, the developmental project in this country is doomed to failure. This budget and the

Appropriation Bill is yet another indicator that the future of this country is in the hands of people without the slightest clue of what purpose research and science serves, and for this reason we reject it. I thank you.

Mr N SINGH: Hon Chairperson?

The HOUSE CHAIRPERSON (Mr C T Frolick): Yes, hon Singh.

Mr N SINGH: Sorry, hon Nxumalo is having some connectivity problems, may I continue with his speech and debate?

The HOUSE CHAIRPERSON (Mr C T Frolick): Yes, you may proceed hon member.

Mr N SINGH: Thank you very much. Hon Chairperson, the fact that hon Nxumalo is having these connectivity problems highlights Minister the need for innovation when it comes to the provision of adequate and appropriate network coverage particularly in rural areas. I don’t think hon Nxumalo is the only one that goes through this problem but many members of Parliament and the public out there have to endure these

problems so I hope looking into that arena would be the major service providers of mobile network.

Chairperson, this budget vote comes at a time when the world is still reeling from the devastating effects of the Covid-19 pandemic. Never before has science been so important to humanity. The pandemic has shown us that we need innovative solutions to address health and other challenges. Be it in the education sector, in the manufacturing sector or any other sector.

The pandemic has also brought to us the reality that funding for science and innovation requires long term commitments to develop the capacity to address national emergencies and global challenges.

For this reason, we cannot ignore the importance of giving this department a strong budget. We cannot deliver on the promises of the Fourth Industrial Revolution if we do not fund science and innovation.

For us to fully benefit from the Fourth Industrial Revolution we must have a robust framework for this department. If we do

not do that, we will continue to buy foreign technology which we could have produced locally and we will continue to rely on other states to help us solve problems in South Africa.

An example in this regard is the issue of the Covid-19 vaccine. Since the outbreak of the pandemic, other states have produced vaccines due to the strength of their funding for science and innovation.

We could have done the same if only sufficient funding had been provided for the department in the long term and if we had put an aggressive plan for science and innovation in place at the dawn of our democracy.

However, the IFP welcomes the department’s socio-economic innovation partnerships which will see this country having identifying areas that need sustainable development capability in science, technology and innovation.

In this regard, we call for more funding for energy and bio innovation as these are some of the most pressing areas that require our attention. The IFP also welcomes the commitment to

fund several instruments is support of increased localisation, competitiveness and research development for our industry.

The foremost commitment in this regard Chairperson should be to ensure that not only do we fund undergraduate students to undertake science and technology courses but we also develop knowledge at postgraduate level. This will create a strong understanding of scientific concepts which could form the bases for practical solutions for many problems facing this country.

Funding will develop our capacity in science and enable us to attract and retain young energetic minds with commitment to innovation. South Africa will benefit if such funding and encourage students to undertake postgraduate research and to remain in research. It should also be channelled into courses and programmes that address the immediate need for our communities such as energy, water, security, food, transport and maxims among others.

As I said hon Chairperson and hon Minister, as a result of the Covid-19 pandemic, the whole world, let alone South Africa are operating in a new normal whilst Covid-19 is having a

devastating effect through loss of lives, the healthcare sector being overstretched and the economy taking strain.

It has brought about significant changes in the way we do things. This debate today is a case in point. It is said that we must always look for the seed of hidden opportunities in every adversity. That time has arrived hon Minister and you need to seize the moment. The IFP accepts this budget. Thank you.

Dr W J BOSHOFF: Hon House Chair, it has been said, maybe in jest, that science is the religion of the secular state and that scientists are the priests.

The things we don’t understand can be explained by science and if we still don’t understand, we should just believe.

Questioning scientists is not recommended. It could be wrong, but even worse, one can be ridiculed.

There are a few problems in this department which in true religious spirit, I want to share. My enquiries revolve around the Council of Scientific and Industrial Research, CSIR.

The first problem relates to the end of service of previous CEO, Dr. Sibusiso Sibisi. He declared in 2016 that the DG of Science and Technology approached him with a request to influence the tender for a super computer the CSIR was about to buy. He publicly refused to do so.

Then, allegations of maladministration were made against him by an ex-employee. According to media reports, the Minister at the time viewed the allegations in a serious light and ordered an investigation.

Subsequently, Dr. Sibisi’s contract term came to an end and he was not reappointed. My own research on the matter revealed no conclusion in the investigation against him and I asked a written question to the current Minister. He answered that there was in fact no investigation where public rumours about the investigation just [Inaudible.] to create a club.

Soon afterwards in 2017, the current CEO was appointed and, maybe unrelated, the CSIR turned its energy opinion away from renewables towards the nuclear build programme of the time.

Another saga at the CSIR involves the highly regarded National Laser Centre, NLC. Technology to do 3D printing with titanium and other metals was developed here and South Africa became a world leader in the field. Aeroswift project was a partnership to commercialise CSIR-developed technology in the aircraft industry. The largest 3D printing facility in Africa, possibly the world, would produce strong and stable, but lightweight components.

The technical lead of the project pointed towards irregularities and slow advancement. He was replaced in that position and subsequently forced to take retirement. On his last day at work he was summoned by the head of the centre and informed that he had to hand in his laptop immediately and vacate his office within 30 minutes. When he attempted to complete a discussion with an outside client, he was escorted out by security; 7 hours before retirement.

In the aftermath, he was prevented to work with any of the partners in the project or to have contact with any employees of the CSIR, past or present. Notwithstanding his departure, about a year later the board of the CSIR reacted on his

allegations of maladministration by appointing forensic investigators Fivaz and Associates.

When I asked question about this matter and the Fivaz report November last year, the current CEO of the CSIR assured me that all recommendations in the report were adhered to and that the institution acted decisively against those pointed out.

In December 2020, the Minister kept a promise made during a question and answer session and the Fivaz Report was sent to me. This report clearly exposed the appointment of the current head of the NLC as irregular. It recommended that the centre should be restructured and that he should not be part of the new structure. The CSIR should have entered into negotiations with him, regarding a new position. Action should have been taken against the person responsible for his appointment.

When I recently asked the CEO of the CSIR what had happened, he responded that the person is now nearly three years down the line, still in his position and that no action can be taken against him, as he was not responsible for his own

appointment. And the person who appointed him has left the organisation for other reasons.

The report also indicated that this same person took the initiative in the forgery of time sheets which led to the CSIR sourcing around R2 million illicitly from the Department of Science and Innovation. The CEO commented that these were only internal control measures and required no action although the Fivaz report differs. Let’s call this action decisive because the CEO of the CSIR would never lie to Parliament. There are more but time is not on my side. The FF Plus rejects the budget. I thank you hon House Chair.

The DEPUTY MINISTER OF HIGHER EDUCATION, SCIENCE AND

INNOVATION: House Chairpersons and Chief Executive Officers, CEOs of entities, officials of the department, ladies and

gentlemen. It is my honour and privilege to join the Minister

in presenting the budget of the department of science and innovation. I dedicate this address to the people of Palestine and do so with the sincere hope that one day they too will know the taste of liberty and dignity. With our country having had the bitter taste of violence for so long, we have a duty to stand in solidarity with the oppressed people all over the

world, and fight for global peace to the bitter end. As long as the people of Palestine living ever present sphere with women and children losing their lives and live mercilessly at the hands of an imposing power. We too cannot claim our freedom.

There’s no doubt hon members, the COVID-19 pandemic has turned

our world upside down. It has not just changed the way our institutions function, it has essentially changed life as we

know it. This new reality has tested humanities will to

survive, but it has also tested the agility of our national system of innovation. Like all state institution, we, as the

Department of Science and Innovation have tried to re orientate our resources and programmes in support of our

nations response to the COVID-19 pandemic.

As alluded to by the Minister, our technology stations leaped

into the bridge immediately. For instance, our downstream chemicals technology station at Nelson Mandela University began producing an emergency supply of hand sanitisers for the university’s internal use at the start of the pandemic, which led to a flood of requests for assistance from companies and

government, including the Eastern Cape Department of Health and Chris Hani District Municipality.

The product development, technology station and medical device, additive manufacturing technology demonstrator at the

Central University of Technology began producing parts for the national ventilator programme. Owing to exceptional to the

product development capabilities in the province, the high quality Flow Management Position, FMP 2 ... [Inaudible.]

clinicians respirator, was developed, manufactured, tested and

regulated all within two months.

Hon members, such response would not have been possible without our deliberate investment in the development of human

capital. The need for human capital development becomes even more urgent, be viewed in the context of the South African

quarterly labour force survey for the fourth quarter of 2020,

which supported unemployment to be at 32,5%. As you may be aware, this rate was even higher among young people between the ages of 15 and 34, in addition to the persistence of historical and structural factors, unemployment in South Africa is exacerbated by a lack of workplace skills and formal experience. In response to this complex challenge through our

youth into science strategy in the 2020-21 financial year. We have placed with placed 605 unemployed sciences, technology, engineering and mathematics graduates with various institutions where they are able to provide services to communities and gain workplace experience. We paid a monthly

stipend of up to R6000, depending on qualifications for the entire duration of twelve months in this programmes of the

Department of Science and Innovation, DSI.

This intervention has seen steady progress since its inception

in 2008, and has yielded a 72% success rate in support of skills development through our hydrogen fuel cell training

valid validity programme that has trained 17 unemployed Technical and Vocational Education and Training, TVET,

graduates they will be deployed as technicians for the hydrogen fuel system across the country. As part of our

efforts to provide learners with extracurricular support in

the critical areas of science, technology, engineering, mathematics and innovation ... [Inaudible.] ... we use, among others, Olympiads and related competitions.

Currently, less than half a million learners participating ... [Inaudible.] ... Olympiads and related competitions in a

population of about thirteen million learners. As part of our efforts to stimulate young people’s interest in the subjects of science, technology, mathematics and innovation. We are currently supporting up to 35 science centres across the country. One such centre is the one in Cofimvaba, the

Cofimvaba Science Centre. We see the science centre as an opportunity to task an intergovernmental partnership model of

establishing and running a science centre, where the three spheres of government collaborate post establishment

management of science centres. If successful, we hope to

develop intergovernmental development approach of science centres modelled around Cofimvaba Science Centre.

It may please hon members to know that we intend to launch the

Cofimvaba Science Centre as part of the 2021 youth month celebrations. Scientific innovation, to achieve broad societal

impact we need a capable, efficient and agile state as part of

our contribution in this respect, in partnership with the South African Government, the Human Science Research Council and the University of Kwazulu-Natal we will be broadening the use of the municipality innovation maturity index, MIMI.

MIMI is a decision support tool designed to measure the innovation, capabilities and practices of municipalities and their readiness to adopt innovations to improve the delivery of basic services.

In the coming months this initiative will be launched nationally to increase the percentage of municipalities

participating in the MIMI initiatives, to over 50%. To enhance the efficiency and agility of the state, and in particular our

department’s capacity to implement its programmes in all nine

provinces over the past three years.

Through the Council for the Scientific Industrial Research, CSIR we implemented the Regional Innovation Support Programme

Risk. This programme seeks to facilitate the establishment of innovation support interventions on behalf of the department

Hon members, we are pleased to report that the risk programme has grown from three initiatives in 2018, to 16 initiatives in 2020. There are currently interventions in most of our provinces. One of the key themes of my address at last year’s Budget Vote debate was about how best to position our country to respond creatively to the Fourth Industrial Revolution, in

partnership with the national Department of Human Settlement, KZN Department of Human Settlements and the University of Johannesburg.

We are currently piloting the use of three d printing

technologies for the construction of houses. This flagship projects will be tested in housing units and will be used to

assess the policy implications, social acceptance and financial implications of deep rooted in the built

environment. This project will also support the participation

of local Small, Medium, Micro Enterprises, SMMES and entrepreneurs in the localisation of three d printing machines

for the human settlement sector.

Also related to the Fourth Industrial Revolution technologies, we are pleased to report that progress has been made with a

framework for quantum technology research and innovation in

South Africa. The framework identifies niche opportunities that could kick start a quantum technology industry in South Africa with modest investments. The potential application of quantum computing cut across many industries and could help leapfrog the local high tech industry to the forefront of the Fourth Industrial Revolution.

We continue with our work with science councils, universities and other government departments, including the Department of Environment, Forestry and Fisheries and the Department of Trade, Industry and Competition. Our efforts are aimed at research development and innovation in such areas as

materials, floor analysis, the beneficiation of forestry biomass, waste streams, electronic dismantling and processing

technology, marine plastic pollution, the use of waste public endorsed construction and integrating waste pickers into the

economy. All these interventions are aimed at meeting the

Paris agreements objectives of a low carbon world, enabling a shift towards the circular economy that will be characterised

by paradigms such as equal innovation, a low carbon economy, resource efficiency the bi economy and environmental

technology.

As far as future projects are concerned in the 2021-22

financial year two additional research infrastructure will be established as part of the continued rollout of the South African research infrastructure road map. These are the ... [Inaudible.] ... manufacturing facility. In the South African Collier Research Infrastructure.

This financial year, we are also looking at the implementation of the national big data strategy for research development and innovation. Its primary aim is to maximise the return on investments in research, big data, and the ... [Inaudible.]

... realise the economic, social and educational scientific

and industrial beneficiation potential of research, big data for South Africa. Development of the national big data

strategy can be regarded as a major intervention by the research sector. We also intend to reconfigure the national

institute for theoretical physics into a national institute

for theoretical and competition of Sciences.

This reconfiguration follows one of the findings of the review of the higher education, science, technology and innovation

institutional landscape. The South Africa’s institutional

landscape, has expanded far less than the scope and scale of

its research and scientific capabilities. The reconfiguration

resource in accordance with our White Paper.

In conclusion, House Chair, this Budget Vote debate takes place during an important month, Africa month, which marks 58 anniversary of the founding of the Organisation of African Unity. In this context it is perhaps appropriate to conclude

by borrowing from the wisdom of one of the founding fathers of African unity, Dr Nkrumah, who said;

The struggle against colonialism does not end with the attainment of national independence. Independence is only

the prelude to a new and more involved struggle for the rights to conduct assessed to construct our society

according to our aspirations unhampered by crushing and humiliating neo colonialist controls and interference.

I, thank you House Chairperson.

The HOUSE CHAIRPERSON (Mr C T Frolick): Thank you, hon Deputy Minister. Hon members, I now want to hand over to hon

Joemat-Pettersson, who will preside over the remainder of this mini plenary session, the hon Joemat-Pettersson.

The ACTING HOUSE CHAIRPERSON (Ms J Pettersson): Thank you, hon House Chair. The following speaker will hon Sukers. Hon member, you time has started.

Ms M E SUKERS: Hon House Chair, when Chief Albert Luthuli received the Nobel peace prize he said;

Scientific inventions at all conceivable levels should enrich human life, not threaten existence, science should be the greatest ally, not the worst enemy of mankind.

In 2019, the Department of Science and Technology published

the White Paper on Science, Technology and Innovation. The new policy has been praised as being one of the best policies

produced in Africa. However, very few of my constituents have exposure to science and technology initiatives. This must be

addressed through close coordination between the Departments

of Basic Education, Higher Education, Science and Technology, but we must also heed Chief Luthuli words, and these

initiatives must enrich the lives of our people in a direct and tangible way.

Not only does the need to be close coordination between

departments, but government departments need to ensure that

policy making is research base and data led. It is our contention that especially in respect to social economic impact assessments this is not happening. The Small Company Internship Award, SCIA we have seen, especially in basic education, are poorly researched and we appreciate the undertaking for partnerships that would bring improvement in

this regard. There should be a key focus of the Department of Science and Technology, and I hope that we will see the department offering the support that we will see quality SCIA in the future.

Engagement with communities, with science and technology will also be successful if the values of our people are respected.

In the quote I mentioned at the beginning of this speech House Chair chief Luthuli was speaking of the threat of nuclear war,

and making the point that science and technology cannot be

divorced from ethics and ethical considerations. Unfortunately, there is little mention in the White Paper or

this budget of the need for science and technology to be guided by ethics. Too often people faith, are excluded from

scientific research at all levels, because the environment is hostile to the ethical concerns. This means that when

decisions are made, the ethical concerns of the majority of

our people are ignored.

The ACDP calls on the department to make ethical considerations a priority, and to ensure the voices of people of faith are included, and their voices heard when any decisions regarding science and technology are made? In this

way we honour the wisdom of a man of deep faith Chief Albert Luthuli.

In closing, the ACDP wish to reiterate our stance that there should be prayers for the peace in the Middle East and for all

role players to consider the cost of human lives in the current conflict. I thank you.

Ms D P SIBIYA: Thank you, hon Chair. The history of humanity has in different proxy inverted and transformed matters through science to different development, which have revolutionised society. It is scientific inventions and application of science which has produced solutions to numerous challenges, which are a threat to humanity. For South to resolve its domestic challenges and to contribute to global development, we have to ensure that we provide sufficient support to promote science and develop scientists in various fields of studies. The coronavirus pandemic has demonstrated the importance of science in bringing about solutions which protect us during this current health crisis.

Hon members, the production of new knowledge, and generating exploiting knowledge and innovation is also a critical aspect

to make a social impact which will bring about a change which improves the living conditions of all. This Budget Vote 35 on Science and Innovation is a critical budget in providing support to research and the development of postgraduate and academics.

National Research Foundation: The investment that government provides for the National Research Foundation is not appropriately acknowledged, hon members. The National Research Foundation is a significant contributor on research outputs of the country. The National Research Foundation funded researchers and contributed 29% of the South African publications in 2019. This is a significant impact by the ANC government. This support provided for postgraduate students for honours, masters, and doctorate are critical to expand access to improve the country’s human capability.

The research grants for various research fields have increased research output, producing new knowledge and bringing about various innovations and development. We must note the impact of the pandemic on the financial capacity of the National Research Foundation, as the budget reprioritisation of the 2020 required funds to be allocated for the fight against the

pandemic as an urgent priority. This ... [Inaudible] ... resulted in the decline of postgraduate supported to 6 200 students awarded bursaries for the Budget Vote 2021-22 and

2 000 Doctor of Philosophy, PHD students.

The reprioritisation of the budget also impacted on research grants and the implications of this, will be a decline in the research output. The National Research Foundation will continue to make a significant impact for the country’s research and development. Transformation of the country also requires the changes in the demographics national skills base.

The previously disadvantaged blacks and women should be prioritised for support in order to address the justice. The entity plans to maintain its target of producing new knowledge and generating exploiting knowledge and innovation at 9 250.

The National Research Foundation plays this critical national transformational role in in our society and should be continually supported to deliver its mandate.

International Cooperation: To ensure global competitiveness and cooperation, the department has programmes which focus on overseas bilateral cooperation, to promote and support South

Africans in the bilateral science technology and cooperation with partners in Europe, America, Asia and Australia especially for human capital development collaborative research and innovation. This is important to support our research and innovation, and to also gain exposure from different nations in order to develop mutually developmental collaborations.

Academy of Science South Africa: One of the key entities of the department in promoting science in South Africa, is the Academy of Science South Africa. The implementation of the decadal plan and the increase of innovation, will require us a sustainable developmental growth of human capabilities in science. This requires the recognition and rewarding of outstanding scientific innovations and publications. The promotion of our research outcome and impact should be enhanced to contribute to the creation of a capable developmental state. This is consistent with the ANC policy that, public engagement and promotion of science, technology and innovation should be intensified.

Intellectual Property: Intellectual property is another critical component of innovation, and its commercialisation or

scaling. Our government and its institution should be a critical player in creating markets for domestic technological solutions, which can improve the capacity of the state of developments by entrepreneurs and innovators that are supported by the department including those from the private sector. The pandemic has shown the necessity of technological solutions. We need to locally develop technology and deploy it in support of the use of innovation in implementing state policies in basic education, health, infrastructure projects, scoping, district and local municipal governance.

We have to harness these skills internationally through government policy. Government labour and business should encourage the use and increase their uptake of locally produces technologies.

Governance Capacity. We should also commend the department for maintaining an unqualified audit outcome with entities with good governance system. We are confident that, the department will continue to use its budget allocation effectively and efficiently to ensure the outcomes of the department are achieved.

*IsiZulu*:

Sengivala Mphathi wohlelo [In conclusion Chair] ...

*English*:

... the ANC supports this Budget Vote which is tabled under strange economic conditions. We are confident that it will contribute in achieving the objectives of the White Paper on Science and Innovation and the decadal plan. The budget supports the key programmes of the department. The Economic Reconstruction and Recovery Plan requires skills and innovation to create an inclusive economy, and science should benefit the public as demonstrated during the pandemic.

*IsiZulu*:

Ngiyazibongela Sihlalo [I thank you Chair].

Ms N I TARABELLA-MARCHESI: Thank you Chair. Hon Chair, our fight against COVID-19 continues. With the number of those dying every day from this pandemic, we can’t help but to be alarmed. The slow vaccination pace has become a grave concern to our citizens. On this, on behalf of the DA, I would like to express our heartfelt condolences. May those who lost the battle against COVID-19 rest in peace.

Hon members, our struggle is not only against this pandemic. It is also against unprecedented unemployment especially amongst our youth. The truth is, until 64% of our population is vaccinated, resuscitating our already ailing economy will be a mammoth task. Yet, we are a country that is known for pioneering heart transplant, a country of the first town in the world to have street lights, a country of laser technology, and the list goes on.

However, of late we are making headlines as a country with a corrupt government, that is captured, lacks accountability and one of the slowest pace in rolling out the vaccine in Africa, surpassed by Zimbabwe. Chair you see, South Africa does not lack the know how or the appetite to lead in technology and innovation. We don’t shortage of expertise. Our universities and research centres like the Council for Scientific and Industrial Research, CSIR, the Human Science Research Council and together with a youthful nation, we could be Africa’s economic power engine. All we need is an enabling government that will adequately fund science and innovation to achieve our economic transformation.

Science and innovation should be at the centre of our economic growth. International procurement by the state must be in consultation with this department, to have continuous checks and balances of what we can produce, what warrants international procurement and how to meet the gaps. Instead we see budget cuts and South Africa’s investment in research and development. Currently, research and development stands at 0,8% of gross domestic product and the budget cut specifically on programme four in research and development alone is over

R1 billion.

Hon members this a setback. It is a setback on our set targets of 1,5% by 2030. We will not meet our target. It will be difficult to meet this target if we don’t stick to commitments and see projects come to fruition. Hon Chair, until our state develops an entrepreneurial mind shift, only then we can succeed as a country. What is find is lack of faith in South African made products nationally and the reality is that, the same government that is spending billions on research and development does not have confidence in home-grown products.

This government would rather place an order for overseas technology than from our own companies. For example, CSIR

developed project types of affordable housing and project types of low cost and durable roads, but yet there is no uptake by government. This is unacceptable. It is unacceptable to be buyers of what is out there, when we can produce locally.

The ANC policy ideas don’t find a fruitful solution. For instance, the manufacturing of active pharmaceutical ingredients which led to the establishment of Ketlapela Phamaceuticals was one of them. With the government pulling out, Ketlapela has yet to produce one active pharmaceutical ingredient, API.

Shockingly, in the 2019 Report Cyril Ramaphosa Presidential Health Summit, called once again for the establishment of a competitive state pharmaceutical company to decomodify essential medical supply. This is a typical talk that we have seen and become accustomed to with this government, one step forward and two steps backward.

The Arab Policy is the ongoing safe, clean cost green energy initiative, the South Africa’s Pebble Bed Modular Reactor. The project started in 1993 with a staff component of more than

a1000 personnel. Again, the government withdrew the support from the project when it was just about ready to be rolled out. Instead now, what we see is the government rather opting to use the super polluting Turkish car power-ship fleet, which has left the Lebanon bone dry and reportedly arrived in Durban for an alleged period of 20 years for electricity supply. This is another ANC scandal loading. The Arab Policy id hydrogen fuel set technology, which was supposed to come to fruition in 2018. It is now 2021, there is no sight of this technology being used.

One thing that I have to commend is that Minister, you have managed to come up with a tax incentive that has been taken up by so many companies. They have taken advantage of this. The only problem with this is that, they are glitch for SA Revenue Services, Sars application approval. We need also to encourage other provinces to take advantage of this initiative. I thank you.

Ms N T MKHATSHWA: Thank you very much hon Chairperson of the House, hon members, but most importantly, members of national system of innovation and citizens of South Africa watching at home this evening, good evening. In the year in which as a

country we have marked the year of Charlotte maxeke and have committed ourselves promotion of human rights in the age of COVID-19, it is befitting that we mention Mme Maxeke during this debate on the Budget Vote of Department of Science and Innovation, as she was recognised with a Bachelor of Science degree from Wilberforce University, which she attended in 1901, as the first black South African woman to attain a university degree. As we continue to advocate for more young black women to find the presentation in Science, Technology and Innovation, we say; long live undying spirit of Charlotte Maxeke.

I think we will all be in agreement that science and innovation is absolutely critical for the socioeconomic development of our economy. Hence, the ANC has resolved that government, labour and business, should be encouraged and directed to use and increase their uptake of locally produced technologies, as this will increase local innovation and production. The National Development Plan, NDP, does place science, technology and innovation as one of the key primary drivers for the economy growth.

Picking up from hon Sibiya’s remarks on women in science and innovation, in relation to the legacy of Mama Maxeke regarding the presentation of young black women in science and innovation, we were highly concerned as the ANC post the Budget adjustment of 2020-21, where we saw decline in the budget allocation of Programme 4 on Research Development and Support; because, this decline will then impact the financial muscle of the department to achieve Outcome 2 in relation to near percentage increase of women and black researchers in South Africa’s research and academic workforce, as well as the needed increase in PhD qualifying teaching and research staff. That’s for you, hon Mackenzie, to correct you.

It is pleasing, Minister, to see that it has been 26,8% real increase in funding the development and support towards the 2021-22 budget allocation. This increase is not only welcomed as a benefit for women and black researchers, but it also speaks to ensure continuous research development. You see, this moment during which the entire globe has found itself affected by the COVID-19 pandemic, affirms the importance of scientific research and development as a tool, not only to be used to solve problems or known problems, but also unforeseen problems or crisis such as this pandemic.

One of the reasons why South Africa is one of the leading global research and innovation forces in responding to the pandemic, is because of history of investment that we have put into research and development, thus continued increase investment in research and development remains critical in enhancing our resilience to cope with future crisis.

I think, all hon members, from hon Lotriet, who unfortunately, we are not in a fairy tale cinderella where we could have our fairy godfather, Tito Mboweni wave his magic wand and increase the budget allocation.

I think the true sentiment that most members have is that, Minister, we really need to increase the funding towards science and innovation because of the amazing work that have been done, particularly because the work that has been done in this department directly impacts the realities of societies.

So, hon Suikers, I disagree with you that the work of the department has not respond directly to the needs of ordinary South Africans. This pandemic has showed us that, indeed it does. It has responded to a matter of life and death.

Now let’s speak on a case of a 32-year-old UKZN science graduate, Sandile Cele, together with his colleagues at Africa Health Research Institute making ground breaking discoveries around the COVID-19 variant the 501Y.V2 earlier in the year, which is testament again to the great work that has been done by the South African National System of Innovation. Which again, speaks to the fact that we need to ensure greater investment by both public and private sector into Research and development, R&D.

These discoveries, like I have said, have responded to a matter of life and death and hopefully have reminded us that science and innovation is not a mere expenditure item against the national fiscus, but indeed an investment. Investment by the private sector in research and development remains a concern and as such, we support the publishing of a paper by Treasury inviting public comment on the future of research and development tax incentives.

In line with the sentiments of President Cyril Ramaphosa, on a social compact between public and private sector amongst other institutions in the country, we must see increase in investment by the private sector in order for us to meet our

goal of spending 1,1% of our GDP on the research and development in the MTSF ending in 2024.

Despite the negative impact in the reduction of parliamentary grants towards Council for Scientific and Industrial Research, CSIR, in 2020-21 adjustment as a consequence of COVID-19, we can all agree that the CSIR has made a significant contribution in supporting the national public and private sector response to COVID-19. In fact, all the entities of the Department of Science and Innovation have really contributed a lot in responding to this particular pandemic.

Just last year, the CSIR demonstrated the capability of the state to develop a domestic manufacturing capacity in order to increase our industrial basin, thus addressing unemployment and poverty. We saw this with the 20 000 ventilators through the national ventilators project of government, which now government is considering exporting some of the ventilators to the rest of the continent.

So, we welcome the increase budget allocation towards the CSIR for year, 2021-22. Indigenous Knowledge System, IKS, in a form of traditional medicine has played a recognisable role in

response to COVID-19. This era of COVID-19 has reignited our appreciation for traditional medicine and systems at large. As the ANC, we remain committed to undoing the historic injustice of the neglected African pedagogy, by ensuring the protection, promotion, development and ethical management of indigenous knowledge.

So, committed to the implementation of Indigenous Knowledge System Act, we welcome the redirection of funds from the National Research Foundation, NRF, towards the special service delivery unit as a way of ensuring that the necessary funding and direct focus is given to the implementation of the IKS Act.

Hon members, one believes that during the constituency period, we all engage with our constituents and take ... [Inaudible.]

... from the conversations that we have. In this last constituency period that we just had, I had a conversation with this young lady called Thulisile Khanyile, who is a PhD candidate in an HIV Pathogenesis Research Units and the co- founder of Nka'Thuto Edu Propeller.

Nka'Thuto Edu Propeller has a mission to advance innovation, science and creativity in previously disadvantaged communities with a vision to develop problem solving skills through teaching science, research, principles and creating commercial science and engineering solutions.

When I asked Ms Khanyile what her concerns as a young black women were, she had her concern firstly, at the late exposure at young people in innovation. She expressed that young people who were furthering their studies in science, technology, engineering and science, technology, engineering, and mathematics, STEM, only got to turn their research into innovation and then maybe commercialise it at a much later stage.

Furthermore, she raised her concern around the lack of awareness and integration of STEM opportunities beyond STEM institutions. Thus having many STEM graduates unemployed or working in field completely out of their desired specs. Now, if one has to stick to the concern on turning research into innovation and then commercialising it, one must start really by welcoming the approval of the draft science, technology and

innovation decadal plans by Cabinet as mentioned by hon Mapulane.

Decadal plans serve as the implementation plans for the 2019 White Paper and part of the goals of the Science, Technology and Innovation White Paper is to establish the Sovereign Innovation Fund which could support the commercialisation of locally developed intellectual property, which then possibly addresses one of the concerns raised by Ms Khanyile.

Then, on her concern relating to the integration of science and innovation into public and private institutions as a form of advancing scientific and innovations solutions, but also ensuring employment, the decadal plans then seeks to ensure that there is a comprehensive approach and mainstreaming of Science, Technology and Innovation across all government operations.

... [Inaudible.] ... also include the convening of the annual Science, Technology and Innovation plenary for the first time by the President. The STI plenary will gather various stakeholders to seek ways in which STI can be mainstreamed across government, private sector and civil society, which

then speaks truth to the President’s vision of social

compacting as a tool to developing our nation.

We also welcome plans to provide support for 70 demonstrators porotypes and other innovation upwards which are critical phases of advancing innovative ideas into tangible products by start-ups and new companies which can be scaled into the market.

As the ANC, we are really inspired by the plans and convictions of the Department of Science and Innovation towards contributing to the implementation of the COVID-19 reconstruction and recovery plan. As the ANC, we appreciate that science, technology and innovation plays a pivotal role in the building of this new economy. And, we must include in our plans, how we aim to address the second pandemic which is listed by the President as the scourge of gender-based violence which plagues the lives of women and children and members of the Lesbian, Gay, Bisexual, Transgender, Queer, Questioning, Intersexed, LGBTQI community in our country.

We thus must ensure that the new national gender-based violence survey, officially titled South African National

Survey on health, life experiences and family relations conducted by Human Sciences Research Council, HSRC, is successfully implemented by the set date of December 2022. We wish it could be quicker, but we understand that the research has to be done thoroughly. We welcome that this survey seeks to ensure a more holistic approach to better understanding the socio and economic dynamics that underpins the scourge of gender-based violence and femicide across society.

Science and innovation must assist us to defeat COVID-19; to accelerate economic recovery; to implement economic reform as we create sustainable jobs; to drive inclusive growth and to strengthen the state and its fight against corruption.

So, hon Boshoff, I think there are a lot of development made on the case that you mentioned and I think the Chief Operating Officer of CSIR has been trying to articulate to you the progress that has been made on the matter that you raised with regards to the irregular appointment. And I really think that what we need to take from this as hon members, is how to ensure that under this leadership of CSIR, this matter doesn’t reoccur.

We need to put up the right policies and frameworks to ensure that this type of irregular appointment does not happen again and does not affect people like the individual that you are mentioning, that we are of the view that has been unfairly affected by this particular matter.

What we must also ensure as we recover our economy and we use science to do so, is that we do so with a transformed, intersectional, representative and inclusive national system of innovation. A system that will ensure that these disparities that have been highlighted by the COVID-19 pandemic, do not cease to exist in our communities.

Hon Chairperson of the session, thank you so much. The ANC supports this Budget, and hon Mapulane, we have so many views that have emerged in this debate, the Parliamentary Monitoring Group, PMG archives have never really engaged in our portfolio committee meetings. If you listened to the Department of Science and Innovation, it’s really good to see these members on this Budget, thank you so much. We also thank the hon Singh for accepting the Budget on behalf of the IFP and the hon Nxumalo. Thank you so much, Chair.

The MINISTER OF HIGHER EDUCATION, SCIENCE AND INNOVATION: Hon

Chair, let me start by thanking all those who supported this budget, and in particular to also thank members of the committee of the ANC, the chairperson hon Mapulane, mama Sibiya and hon Mkhatshwa. I also need to say that today is the birthday of a very special South African, the late Walter Sisulu. It is in memory of people like him that we are continuing this task of transforming science and innovation in our country.

As I close, I also need to say that we need to acknowledge the progress that we are making ... the foresight by the President to bring together both the Department of Higher Education and Training and the Department of Science and Innovation under one ministry, as a lot of Department of Science and Innovation, DSI, supported and driven scientific research and innovation takes place in our universities.

I also want to highlight that the point that hon Mapulane made about the decadal plan as a major platform for taking things forward, is welcome.

I also want to say to the member of the ACDP that we need ... the decadal plan is in fact the platform which will promote those Ministers who are closer to science and innovation, space to work together. Also, to the hon member of the ACDP, we must not only pray for peace in the Middle East. We must stand in solidarity with the Palestinian people and condemn apartheid Israel for the atrocities it is visiting upon the Palestinian people.

I also want to say that we understand the concerns by the ANC with regard to the pace of transformation in the sector and that is why we are focussing on supporting and the development of youth, women and black South Africans.

To the DA, we also need to say that you are Members of Parliament. You need to participate in the debates about the allocation of budgets so that you are able to also raise your matters there.

The less said about the EFF the better for science and innovation in our country. Hon Tambo spoke about the fact that I haven’t said ... nothing has been said about ...

*IsiZulu*:

... izinyanga.

*English*:

However, I did say it. The problem is that he didn’t update

his speech after listening to me. I did talk about that.

We thank the IFP for the support, although hon Singh, maybe you are a bit unfair on us. Let the IFP spend more money to ensure the connectivity of their members as well.

*IsiZulu:*

Awuthi ukufaka imali kancane lapho babu Singh, i-IFP.

*English*:

I think that hon Mkhatshwa has answered the points raised by hon Boshoff of the FF Plus. All the matters he talked about

with the *Council for Scientific and Industrial Research,* CSIR**,** have been concluded and no-one was found guilty. Also, the National Lotteries Commission, NLC**,** matter is with the *Commission for Conciliation, Mediation and Arbitration,* CCMA. I want to assure him that I as Minister, with our entities, insist that where there is wrongdoing or problems or disputes,

that these must be dealt with swiftly and progressively, so that we are not left with unattended problems.

I do want to acknowledge what hon Marchesi has said about the role that is played by our research and development, R&D, tax incentives — a point that has also been underlined by hon Nompendulo.

*IsiZulu:*

Ngicela ukuqeda ngokuthi ngithi kwintsha yakithi heyi maningi amathuba la kwezobuchwepheshe noSosayensi. Ngicela nifunde zingane zakwethu nithathe wonke lamathuba ngoba ikusasa lalelizwe lisezandleni zenu. Asifuni nje intsha kuphela ukuthi ithuthuke, kodwa sifuna ukuthi ithuthuke ngokuthi ifunde, iye ezikoleni ibe ngososayensi ngoba izwe namhlanje selidinga ukuthi abantu bafundile. Lolu xhaso eniluthola kuhulumeni nilwamukele ngezandla zombili, ukuze sikwazi ukuthi sisebenze sakhe iNingizimu Afrika, eyoba iNingizimu Afrika enenqubekela phambili nekusasa lenu elikhanyayo. Ngiyabonga.

*Afrikaans*:

Baie dankie, agb Voorsitter.

Debate concluded.

The mini-plenary session rose at 18:20.