Paper 76

The Perception Of Upstream Oil And Gas Employees Concerning The Readiness In Change Management To Face The Energy Transition Case Study PT. PHI

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Abstract – **The world is changing, human as a ruler in this planet start to see the needs of earth conservation. The green energy movement will affect oil and gas company as the result of commitment to reduce the Carbon level in the air. Some research regarding the future consumption of fossil fuel are quite surprising that in the near future the usage of fossil fuel expected to extremely decline due to utilization of new and renewable energy source in daily life. As an impact, Oil price estimated to decrease drastically in the future because of decrease in fossil fuel demand, therefore this condition lead to some thoughts about going concern and the sustainability of the oil and gas company and also the impact to the job security for oil and gas upstream personnel.**

This research conduct to explore and digging the readiness of the company and personnel from the point of view of upstream personnel in facing energy transition. Employee must be equipped with the latest knowledge and information about energy transition, personnel mobility to the new and renewable affiliates will provide great experience to prepare the upstream employee to be ready for the Energy Transition Period.

Keywords – **Energy Transition; The future of Oil and Gas Upstream Business; Upstream Personnel Perspective; Employee empowerment.**

I. INTRODUCTION

The energy transition has recently become a topic that has attracted the attention of all peoples in the world; this is due to a change in the mind-set of world citizens regarding energy needs that are generated from cleaner, more sustainable sources that come from renewable energy sources. Paris Agreement is a major commitment from all countries in the world in facing global climate change, which is getting worse. Currently fossil fuel is one of the factors that have been blamed for the worsening global climate conditions. However, global energy needs still rely heavily on fossil fuels. Countries in Europe are starting to think about steps towards cleaner energy. Regulations and initiatives from the private sector have supported these movements towards better energy. For example BP Net Zero Initiatives. In contrast to the continents of America and Asia the use of fossil energy, still become main priority in the energy mix. When we are talk about energy demand in Indonesia we can see government plan on the energy mix still rely on fossil fuel.

Some research regarding the future consumption of fossil fuel are quite surprising that in the near future the usage of fossil fuel expected to drastically decline due to utilization of new and renewable energy source in daily life.

Oil price expected to be dropped in the future because of decrease in fossil fuel demand, therefore this condition lead to some thoughts about going concern and the sustainability of the company.

The world is changing, human as a ruler in this planet start to see the needs of earth conservation. Some of research told us about the deteriorating of environment in this planet. Modernization leads to use of huge amount of fossil fuel as the main source of energy in the last decade. This have an impact in the increase of planet temperature and leads to the changing in the global climate. Nowadays people think to find green energy sources, which has a very minimum damage to the environment. The movement will affect oil and gas company as the result of commitment to reduce the Carbon level in the air. This research conduct to have a clear perspective from the upstream personnel in facing the new era of energy.

This paper presents results of a research assessing the company and personnel readiness facing energy transition period in upstream energy sector and aim to answer these research questions :

1. Based on change management model, how do upstream personnel understand regarding the acceleration of energy transition currently?

2. To what extent is the Company ready to enter the energy transition period? What strategic actions have been taken so far?

3. What are the main findings on the change management model regarding the readiness of upstream personnel to face the energy transition?

II. LITERATURE REVIEW

ADKAR is an acronym for the five sequential steps that the individual needs to go through in order for any change to be successful (Hiatt, 2006). Prosci Research (2004) argue that while the organization is following the three phases of organizational change in relation to the organizations objectives, which include preparing for the

change, managing the change and reinforcing the change, it is important that the preparedness is assessed from the employee's point of view.

A- Awareness of the need for change The ADKAR model proposes that understanding why change is necessary is the first key aspect of successful change. Hiatt (2006) argues that this step in the ADKAR change model explains the reasoning and thought processes that underlies a required change.

D- Desire to participate in and support the change the desire to change concerns an understanding on the part of the change participant on how the proposed change is going to impact him/her (Hiatt, 2006)

K - Knowledge on how to change the third element of the change readiness assessment model relates to the change participants knowledge about the change. More specifically, it is the understanding by the change participant as to what knowledge is required by him/her due to the change.

A- Ability to perform during and after the change Hiatt (2006) argues that it is not just the theoretical knowledge of the change that needs to be assed but the ability of the change participant to perform the change.

R - Reinforcement to sustain the change The final stage of the change readiness assessment is an understanding by the change participants as to whether the change proposed is sustainable (Hiatt, 2006).

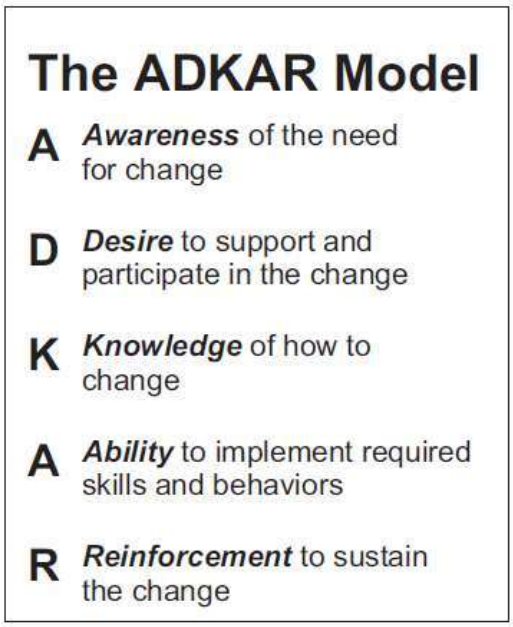


Figure 1. The ADKAR Model

III. METHODOLOGY

The author started the research by stating the business issue, deciding the research objectives and doing data collection using qualitative and quantitative analysis approach, the author trying to align internal analysis (using VRCN, Resources, Capabilities & Core Competencies Analysis) and external analysis (using PESTEL, Porter 5 forces model) to get a mapping of influencer to the business performance. In the other hand to collect and gather the perspective of upstream personnel, for quantitative analysis the author trying to conduct survey by distributing online questionnaire to the PT Pertamina Hulu Indonesia employees. A set of question was distributing to explore the upstream personel perspective regarding, Indonesia external analysis Requirements for Indonesia to accelerate energy transition, Company Role – PERTAMINA HULU INDONESIA GROUP - in Energy Transition and employee Readiness facing the Energy transition era. Despite this primary data, the author collect the secondary data which came from published academic journal, busines publication, reliable news and from the company annual report.

The final step of this research is check data validity and reliability. Ghozali (2009) states that the validity test is used to measure the validity or validity of a questionnaire. A questionnaire is said to be valid if the questions on the questionnaire are able to reveal something that will be measured by the questionnaire and according to Sumadi Suryabrata (2010) reliability shows the extent to which the measurement results with these tools can be trusted. The measurement results must be reliable in the sense that they must have a level of consistency and stability. After passed the test the result were put on the ADKAR framework to have a score for evaluate the company or personnel readiness. The research methodology is shown in Figure 2.

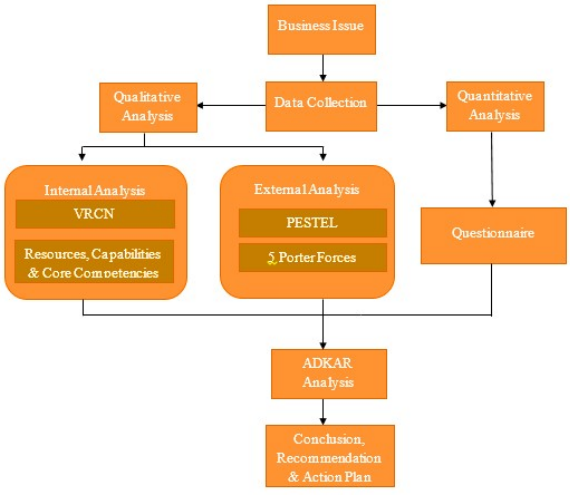


Figure 2. Research Flow Diagram

The scope of this research are the assessment to capture the understanding and / or involvement of upstream personnel in the "energy transition" and to measure the readiness of companies and personnel to face changes during the energy transition. By answering this survey, respondent are contributing to the company's continuous improvement in creating innovative leaders for the advancement of business, government and society.

The limitations of this research are this Research would focus only in PT. Pertamina Hulu Indonesia and subsidiary personnel perspective only in order to be more focus on developing a recommendation for the growth and development of the company where the authors were working. Due some time constraint, The duration of questionnaire collection are between 3rd April until 7th April 2021. Some of publication using data from 2019 due to availability of the publication sources. All the organizational and operational data using a framework before reorganization of Pertamina Upstream Subholding on April 1 2021..

IV. RESULTS AND DISCUSSION

A. Qualitative Analysis (External & Internal Analysis)

Based on PESTEL Analysis, Based on the analysis above, upstream oil and gas business is a very challenging business due to many external factors will give high impact and impose high risk for the business. . Considering post COVID19 pandemic situation which not yet over and continue to bring fear, uncertainty and doubtful because of new variants arise, the economic situation is predicted to be rebound in 2022 onward, so the customers spending will increase as well. The political stability situation in Indonesia will also support the upstream business development, especially when Indonesia are entering election period in 2024. The technology of upstream sector is another challenge for development of upstream oil and gas business, which currently are; look for any discovery in frontier and extreme environment such as deep water, enhanced oil recovery, CCUS in field rich with CO2 content and any other advanced technology which need high capital and high competent peoples. Finally, all the regulation issued by the government of Indonesia will put huge impact on the development of new and renewable energy in Indonesia, how this regulation can keep the upstream business in the safe zone as an energy during the transition period. Government of Indonesia must support the overall upstream business value chain by releasing the supportive regulation to make the transition is running in smooth way. Based on VRCN Analysis, majority of the resources & capabilities has sustainable competitive advantage. The combination of strong reputation, exclusive rights on E&P activities, strong financial position, supported Leadership & Management, Services Quality and excellent Project Management are become strength of PT. PHI to become world class oil and gas company. However, PT PHI must seek another opportunities and new way of working to create more sustainable competitive advantage..

B. Quantitative Analysis

The author trying to conduct survey by distributing online questionnaire to the PT Pertamina Hulu Indonesia employees. A set of question develop in three big part consist of accelerating in Indonesia, company readiness and personnel readiness was distributing to explore and digging the upstream personel perspective regarding, Indonesia external analysis Requirements for Indonesia to accelerate energy transition, Company Role – PERTAMINA HULU INDONESIA GROUP - in Energy Transition. Employee Readiness facing the Energy transition era. The questionnaire were performed using the Likert scale while the other items were asked in Guttman form (agree/ disagree), and multiple choices as attached in Appendix 1. The online questionnaire was distributed through social networks from April 3, 2021 – April 7, 2021, with target respondents of 100 PT Pertamina Hulu Indonesia and subsidiaries employees to meet the recommended method of at least 100 respondents (Fraenkel et al., 2012) and sample size calculation of Slovin Formula, which is:

$$n = \frac{N}{1 + Ne^2}$$

With n = sample size, N= population, e2 = desired margin of error. In this research, the population (N) refers to the Total number of PHI employee, which was 5449 shown in table 2.1 in 2019, while the desired margin of error € is 10%. The calculation has a result of samples needed, which were 98.20 or rounded to the 100 samples. However the questionnaire in reality covered insight from 167 respondent, with 151 of them were valid. It means that the total respondent in the research were sufficient enough to continue the analysis. Respondent Profile for this survey shown in figure below :

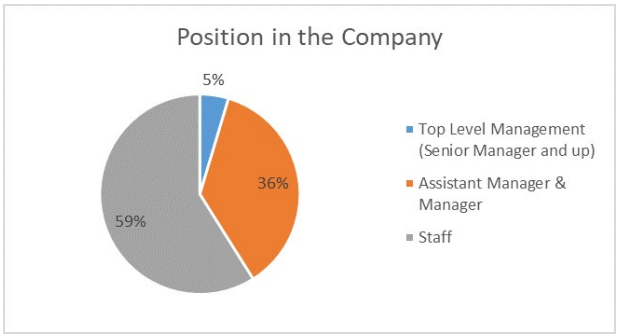


Figure 3. Position in the Company

To have an understanding about respondent profile and job level of personnel position in the organization PT. Pertamina Hulu Indonesia shown in this table 3.1 that the

respondents in this study author categorized in three group of Job Level. The results of this questionnaire state that employee working as Staff dominate this survey with 58.9%, Employee hold position as assistant manager and manager are 36.4%, and top level management represent 4.6% from the total respondent including the CEO respond to this survey.

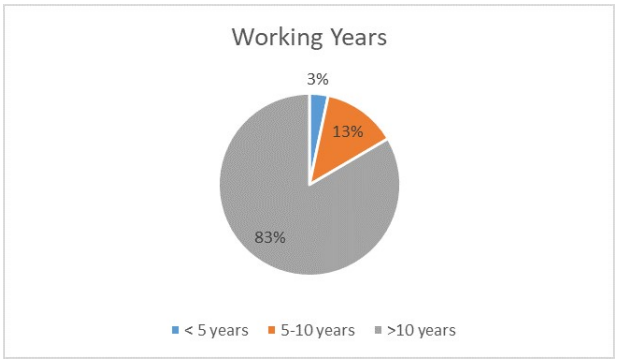


Figure 4. Working Years

To capture level of working experiences of respondents this table 3.2 explain that the respondents in this study were consist of three category working years. The results of this questionnaire state that employee working for <5 years are 3.3%, employee working for 5 – 10 years are 13.2% and around 83.4% respondents already working in this industry for more than 10 years.

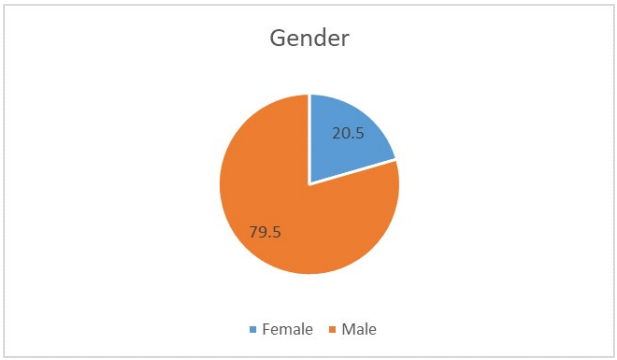


Figure 5 Gender

This figure explain that the respondents in this study were divided into two genders, specifically male and female. The results of this questionnaire state that female respondets are 20.5% and male respondents are 79.5%.

Then author continue to check the validity and reliability of the data.

Based on the 1st calculation done using Microsoft excel, some parameter (question PHI 3 & PHI 13) must excluded must be excluded because not valid.

Table 1 Validity Test First run

No	IDN1	IDN2	IDN3	IDN4	IDN5	IDN6	IDN7	IDN8	IDN9	IDN10	IDN11	IDN12
rxy	0.33	0.29	0.34	0.19	0.20	0.44	0.18	0.36	0.41	0.33	0.40	0.46
t count	4.31	3.64	4.44	2.36	2.46	5.94	2.27	4.71	5.43	4.29	5.28	6.33
Notes	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid

t table (95%, 148) 1.9761

No	PHI1	PHI2	PHI3	PHI4	PHI5	PHI6	PHI7	PHI8	PHI9	PHI10	PHI11	PHI12	PHI13	PHI14	PHI15
rxy	0.35	0.32	0.16	0.35	0.17	0.22	0.39	0.43	0.30	0.41	0.30	0.37	0.01	0.36	0.22
t count	4.56	4.06	1.93	4.51	2.09	2.72	5.17	5.75	3.88	5.45	3.87	4.86	0.17	4.70	2.72
Notes	valid	valid	not valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	not valid	valid	valid

t table (95%, 148) 1.9761

No	PER1	PER2	PER3	PER4	PER5	PER6	PER7	PER8	PER9	PER10	PER11	PER12	PER13	PER14	PER15	PER16	PER17	PER18	PER19
rxy	0.22	0.21	0.28	0.28	0.39	0.33	0.40	0.30	0.29	0.50	0.44	0.39	0.44	0.41	0.21	0.29	0.39	0.43	0.29
t count	2.82	2.69	3.66	3.59	5.21	4.23	5.29	3.89	3.67	7.02	5.76	5.17	5.93	5.46	2.61	3.74	5.57	5.77	3.74
Notes	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid

t table (95%, 148) 1.9761

Rerun done using Microsoft excel, some parameter must be excluded (question IDN7, PHI5 & PHI6).

Table 2 Validity Test Second run

No	IDN1	IDN2	IDN3	IDN4	IDN5	IDN6	IDN7	IDN8	IDN9	IDN10	IDN11	IDN12
rxy	0.38	0.31	0.38	0.23	0.21	0.49		0.31	0.39	0.36	0.46	0.46
t count	5.02	4.02	5.08	2.86	2.67	6.88		3.91	5.17	4.73	6.28	6.33
Notes	valid	valid	valid	valid	valid	valid	not valid	valid	valid	valid	valid	valid

t table (95%, 148) 1.9761

No	PHI1	PHI2	PHI3	PHI4	PHI5	PHI6	PHI7	PHI8	PHI9	PHI10	PHI11	PHI12	PHI13	PHI14	PHI15
rxy	0.36	0.39		0.34			0.30	0.38	0.35	0.37	0.38	0.34		0.47	0.24
t count	4.71	5.13		4.45			3.88	5.01	4.49	4.88	5.05	4.36		6.46	2.99
Notes	valid	valid	not valid	valid	not valid	not valid	valid	valid	valid	valid	valid	valid	not valid	valid	valid

t table (95%, 148) 1.9761

No	PER1	PER2	PER3	PER4	PER5	PER6	PER7	PER8	PER9	PER10	PER11	PER12	PER13	PER14	PER15	PER16	PER17	PER18	PER19
rxy	0.24	0.26	0.21	0.37	0.39	0.33	0.40	0.34	0.30	0.55	0.53	0.49	0.48	0.45	0.24	0.33	0.26	0.40	0.24
t count	3.07	3.30	2.66	4.90	5.13	4.25	5.27	4.48	3.87	7.95	7.70	6.87	6.68	6.23	3.06	4.21	3.52	5.68	2.98
Notes	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid	valid

t table (95%, 148) 1.9761

Therefore there are 41 question valid can be used for the analysis because t-count > t-table.

For Reliability Test by using Microsoft excel, the Cornbach alpha coefficient is shown in table 3 below:

Table 3 Reliability Test

#of items	**41**
sumof the item variance	31.4820403
variance of total score	157.524319
cronbach alpha	0.82014851

According to Dahlan et al. (2014), the cornbach alpha scale is grouped into 5 criteria shown in Table 4

Cornbach Alpha	Internal Consistency
0.81 - 1.00	Very Reliable
0.61 - 0.80	Reliable
0.42 - 0.60	Reliable Enough
0.21 - 0.41	Not Reliable
0.00 - 0.20	Very Unreliable

Therefore because of the Cronbach Alpha of this questionnaire is 0.820149 refer to the table above this questionnaire or respond is Very Reliable.

After we have a result from validity and reliability test, we can continue to the next phase, We will using ADKAR framework to do an analysis in order to have a parameter of readiness.

Code	Description	1	2	3	4	5	Mean	Conclusion	Category
IDN1	1. Indonesia needs to accelerate the energy transition process because of its commitment to the Paris agreement	1	4	30	55	61	4.13	Agree	Awareness
IDN2	2. Indonesia needs to accelerate the energy transition process because the future is there.	1	0	4	48	98	4.60	Strongly Agree	
IDN3	3. Indonesia needs to accelerate the energy transition process because its fossil fuel resources will soon run out	2	5	29	42	73	4.19	Agree	
IDN4	4. Indonesia must accelerate the energy transition process because it failed to improve the replacement ratio level of oil and gas	3	21	38	52	37	3.66	Agree	
IDN12	12. As an archipelagic nation, Indonesia should prioritize the development of Hydropower before any other renewable energy resources.	3	12	45	58	33	3.70	Agree	
PER12	12. I care about energy transitions because it will affect the life of me and my grandchildren in the future.	1	0	7	44	99	4.59	Strongly Agree	
							4.14		

Awareness

Renewable energy provides reliable power supplies and fuel diversification, which enhance energy security and lower risk of fuel spills while reducing the need for imported fuels. Renewable energy also helps conserve the nation's natural resources. Renewable energy sources can be used to produce electricity with fewer environmental impacts. It is possible to make electricity from renewable energy sources without producing carbon dioxide (CO_2), the leading cause of global climate change. Based on questionnaire filled, the level of personnel awareness regarding energy transition is satisfactory. Almost respondent agreed that Indonesia need to accelerate the energy transition for several reason. Respondent believe that energy transition in Indonesia must be accelerated due to commitment to international community their vision about the future of energy is need of new sources because the fossil fuel will run out soon and utilization of renewables energy such as hydropower for the sake of future life of their future descendants and one of another factor is the failed of the nation to improve the level of replacement level of oil and gas.

Code	Description	1	2	3	4	5	Mean	Conclusion	Category
IDN5	5. Seeing the better condition of the level of air cleanliness during COVID-19 Pandemic, we must start thinking about leaving fossil energy.	4	13	35	53	46	3.82	Agree	
IDN6	6. After the COVID-19 pandemic, efforts are needed to accelerate the use of environmentally friendly new and renewables.	0	2	16	70	63	4.28	Strongly Agree	
IDN7									
IDN8	8. Regulations and the energy mix are in accordance with the conditions in Indonesia which still use fossil fuels as the main energy source.	2	5	31	78	35	3.92	Agree	
IDN9	9. I think that the energy transition is carried out according to the roadmap that has been determined while looking for new and renewable energy sources that are more environmentally friendly.	4	12	41	63	31	3.70	Agree	
PER1	1. I am ready for the Energy Transition Period?	0	3	21	64	63	4.24	Strongly Agree	
PER2	2. I am not worried about energy transitions	9	10	35	66	31	3.66	Agree	
PER3	3. I am not worried about losing my job because of an energy transition?	6	9	27	65	44	3.87	Agree	
PER13	13. I want to be involved in energy transition projects that are owned by the company	0	0	19	54	78	4.39	Strongly Agree	
PER14	14. I want to be involved in formulating a new strategy in facing the energy transition phase	1	1	25	58	66	4.24	Strongly Agree	
							4.01		

Desire

Desire

The energy transition means a fundamental transformation of our societies and affects everybody's day-to-day life. It is not only about climate change, greenhouse gas reduction and the use of new technologies. It represents an opportunity for structural change where citizens need to play a key role. The issue of citizen participation is central. How can the energy transition work for citizens? How can energy be accessible for all? How energy transition can attract upstream employee to be InTouch and participate in this movement. In this section, the overall score 4.01 show that the employee or respondent has a big desire to change, The Personnel are ready for energy transition period, they not worried with energy transition period and surprisingly upstream personnel not worried for losing their job because of energy transition. Respondent want to be involved in the energy transition projects that owned by the company. Respondent want to be involved in formulating new strategy in facing the energy transition phase. The air quality improvement in big cities during COVID-19 lockdown period has made everyone aware that maybe it's time to switch to better energy and start thinking about leaving fossil energy. However, the respondent agreed that the energy transition is carried out according to the roadmap that has been determined while looking for new and renewable energy sources that are more environmentally friendly. The closest and easiest contribution for upstream sector personnel is providing supply of Natural gas as a bridging for the transition period according to National energy mix plan.

Code	Description	1	2	3	4	5	Mean	Conclusion	Category
IDN11	11. Indonesia will experience environmental and economic benefits of using renewable energy include: Generating energy that produces no greenhouse gas emissions from fossil fuels and reduces some types of air pollution.	0	2	14	61	74	4.37	Strongly Agree	
PHI3									
PHI6	6. Companies should focus on discovering new reserves rather than thinking about the alignment of their vision and mission to the energy transition	19	48	48	24	12	2.75	Netral	
PHI15	15. Electric cars is a threat to the upstream business?	21	45	46	27	12	2.76	Netral	
PER4	4. It is important for upstream personnel to understand about energy transitions	0	1	3	45	102	4.64	Strongly Agree	
PER8	8. I am interested in participating in webinars on energy topics (Pertamina energy outlook, energy transition planning, de-carbonization, NRE development, etc.) but I did not get any information about the webinar. (Example: Webinar can be accessed https://ptm.id/PertaminaEnergyWebinar2020)	2	10	25	60	54	4.02	Agree	
PER9	9. I increase my knowledge of energy transitions by looking for myself	0	5	30	76	40	4.00	Agree	
PER10	10. Companies need to provide training on energy transitions for employees	0	1	15	63	72	4.36	Strongly Agree	
PER11	11. Companies need to provide a study scholarship on energy policies that will provide a deeper understanding of the energy transition.	1	3	16	61	70	4.30	Strongly Agree	
PER17	17. I have thought carefully about my future career, so that I don't get caught in an industry that is about to close!	2	19	56	46	28	3.52	Agree	
							3.86		

Knowledge

Knowledge

A new survey from Mckinsey in October 2020, finds that responses to COVID-19 have speeded the adoption of digital technologies by several years—and that many of these changes could be here for the long haul. Refer to DNV study after COVID-19 outbreak there was a significant decrease on energy demand. Global energy demand will decrease around 8% due to reduction on economic activity and because of change in human habit such as less office activity also change in commuting habit. Movement begins to change the office mode to work from home mode, which will reduce the demand of office space in the future, directly impact on manufacturing sectors such as steel and iron industry.

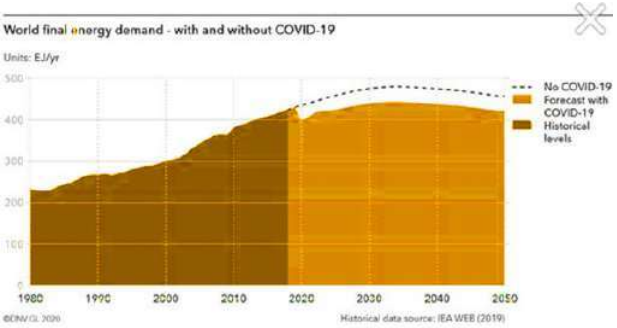


Figure 6 DNV Simulation on Future world energy demand

Digital disruption, decrease on global energy demand, Movement begin for cleaner energy, new technologies on DME, FAME and biofuels, Economic of scale in solar panel, abundant source of energy from geothermal and hydro power in Indonesia will be present as a challenger to fossil fuel as primary energy. To respond to these challenges, businesses must bridge the gap between the capabilities of current employees and the skills that will

be needed to drive future growth, and they must do this by upskilling the existing workforce. Upskilling is about more than just providing access to training. It's about identifying the knowledge, skills and experience that will be most valuable in the future for new and transformed roles, and the individuals who can excel in those roles. Developing an effective way to support and inspire people to take action today and continue to adapt in the future. This means understanding evolving skills gaps and mismatches, creating the right employee experience and buy-in to unleash energy for change, developing engaging skills-development programs, and driving return on investment with an appropriate learning organization and technology. From the ADKAR survey, respondent already have a well basic knowledge regarding energy transition. Everyone strongly agreed that Indonesia will experience environmental and economic benefits of using renewable energy include generating energy that produces no greenhouse gas emissions from fossil fuels and reduces some types of air pollution. Respondent are excited to attend webinar and training. Respondent strongly agreed that the company can provide training and also scholarship that will provide deeper understanding on the energy transition issues. However, respondents seem doubtful about a career in this oil and gas industries. It shown in their answers to the questions about the purpose of the company to find new reserves and the threat of electric cars that will become opponents that must be taken into account in the future as competitors for internal combustion engine vehicles which are one of the largest consumers for oil and gas industries nowadays. Their respond neutral to this question.

Code	Description	1	2	3	4	5	Mean	Conclusion	Category
IDN10	10. Some challenges such as policy uncertainty, market barriers, financing barriers, and low renewables manufacturing capacity have been contributing to the sluggish development of renewables in Indonesia.	1	2	23	48	77	4.31	Strongly Agree	
PHI2	2. Companies need to start thinking about a new inline vision and mission with energy transition mapping	0	2	12	71	66	4.33	Strongly Agree	
PHI5									
PHI7	7. Indonesia is still deficit in oil and gas production, so I am still optimistic that the upstream business has a good going concern.	4	15	45	65	22	3.57	Agree	Ability
PHI8	8. The company will still last longer than the period of time that the oil and gas reserves will run out	10	25	51	48	17	3.25	Netral	
PHI9	9. The company will discover new oil and gas reserves	2	2	46	67	34	3.85	Agree	
PHI10	10. The company will continue to carry out upstream activities taking into account the reduction of carbon emissions	1	2	34	75	39	3.99	Agree	
PHI11	11. The company is already thinking about carbon emission reduction	2	16	44	60	29	3.65	Agree	
PHI13									
PHI14	14. The company must start thinking about a plan if fossil fuel is not the main choice in the community	2	3	19	64	63	4.21	Strongly Agree	
							3.89		

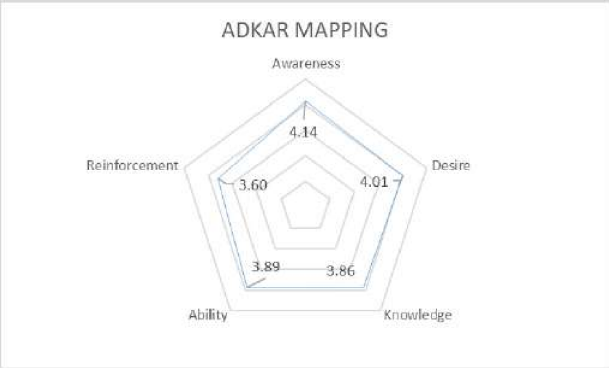
Ability

Currently all the focus and attention from the government are centralize on COVID-19 handling, Oil and gas company should put more attention on the pace of energy transition and the resulting impact on demand. Oil and gas companies should also carefully consider the potential for accelerating energy transitions, especially in Asia. This may have significant implications for some companies, impacting strategies, portfolios, and investment decisions. They should also revisit capital allocation processes in new demand scenarios. Oil and gas company should have an flexible and agile approach in adapting and investing in new low carbon technology. Based on the questionnaire analysis respondent strongly agree that Some challenges such as policy uncertainty, market barriers, financing barriers, and low renewables manufacturing capacity have been contributing to the sluggish development of renewables in Indonesia. Companies need to start thinking about a new inline vision and mission with energy transition mapping and also believe that the company must start thinking about a plan if fossil fuel is not the main choice in the community anymore are strongly agreed by the respondent. However respondent still optimistic on the company going concern because of the respondent believe The company is already thinking about carbon emission reduction and believe on the ability of the company to discover new oil and gas reserves and will continue to carry out upstream activities taking into account the reduction of carbon emissions.

Reinforcement

The current energy supply system, based largely on fossil fuels, must instead be based on renewable energy. Many countries have recognised the urgency of action and have committed to a carbon-neutral future. In this challenging scenario, it becomes of vital importance for both international and national oil companies to assess the future of the energy system, trying to position themselves and find solutions that would keep them in the market and maximise value creation while contributing to global climate change mitigation. On the last part, we can see that the respondent put some doubt about company position in the energy transition period. Refer to the respondent response which mostly replying neutral statement, the company did not seem ready to face the energy transition period and it is not reflected in the vision and mission and the company. Not yet carried out a vision and mission in accordance with the energy transition for example there were no readiness for to make carbon tax payments. The response for the company provides system for employees to accelerate their understanding of energy transitions also neutral, indicates that employee did not seem company provide system that can help employee to learn and increase their knowledge in energy transition. One of the most fundamental aspects that good leadership drives in people is their willingness to contribute. This means phenomenal work comes when people have the passion and the desire to take initiative. Logically, the cure to powerlessness is empowerment. The company must reinforce their employee by providing system for employees to accelerate their understanding of energy transitions. The company can provide information about the activities the company is doing in the energy transition from internal media, internal broadcasts, and internal webinars. In this part, respondent agreed that Employee must be equipped with the latest knowledge and information about energy transition. Upskilling and reskilling should work hand in hand for your organization

to achieve more internal mobility, enabling your talent pool to develop further personnel mobility to the new and renewable affiliates will provide great experience to prepare the upstream employee to be ready for the Energy Transition Period. The truth of the matter is that the talent market and the work landscape are continuously changing. Having a skilled workforce within your company can help you immediately promote and reassign your employees whenever the need arises. According to Deloitte, internal talent mobility can also boost employee engagement by as much as 30%. Since reskilling is a central element to achieving internal mobility, employees who are developing and are given the opportunity to learn other things outside of their own fields become more engaged not only in the reskilling programs but also in the company. Engaged employees equate to better productivity for the company. One of the greatest benefits of having internal career mobility is that you allow your employees to further nurture their knowledge and skills, increasing their professional competencies that match the demands of the ever-changing workplace. Employee mobility can support long-term employability of your workforce by encouraging them to shift roles, projects, and work assignments. It create room for lateral growth by giving chance to have new capabilities through series of upskilling program. Having a strong skill set gives anyone the freedom to expand their skills set, pivot to another career path, and grow more within our organization. Upstream employee ready to move to Sub Holding new & renewable for example to geothermal with respondent score 4.17. With a score of 4.31 Upstream employee strongly believes that Movements to the new & renewable Sub Holding will provide new exposure to the energy transition. Based on respondent response, respondent strongly agree that companies must equip workers with new knowledge so that workers are ready at any time to be assigned to other energy companies within the scope of the holding with score 4.44.



Refering to Angtyan (www.irmbrjournal.com, 2019). The ADKAR model is a valuable framework for organizational leaders, change managers and project managers to effectively lead a wide variety of changes. To capture the changes needs in adapting to energy transition period therefore the authors use ADKAR as the main tools. The major findings of dominant factors based on the ADKAR Analysis mapping from the response gathered, result from the examination for the primary data result, and combined with secondary data and observations from the researcher, herewith are the points to answer the research questions as described in the business issue exploration:

1. Based on change management model, how do upstream personnel understand regarding the acceleration of energy transition currently?

Refer to the ADKAR model with mean 4.14 in awareness, the level of upstream personnel awareness regarding energy transition is satisfactory. Almost respondent agreed that Indonesia need to accelerate the energy transition for several reason. Respondent believe that energy transition in Indonesia must be accelerated due to commitment to international community their vision about the future of energy is need of new sources because the fossil fuel will run out soon and utilization of renewables energy such as hydropower for the sake of future life of their future descendants and one of another factor is the failed of the nation to improve the level of replacement level of oil and gas.

2. To what extent is the Company ready to enter the energy transition period? What strategic actions have been taken so far?

Based on Internal and external analysis, Energy transition in PT PHI has been carried out with some strategies, namely :

- reducing greenhouse gas emission
- utilization of renewable energy sources such as photovoltaic in operational
- stepping out for gas field exploration
- utilization of gas as vessel fuel.

It is proven that Pertamina Hulu Indonesia ready to face the energy transition period through some effort has been successfully completed. Refer to ADKAR scoring, ability has a mean 3.89 Based on the questionnaire analysis respondent strongly agree that Some challenges such as policy uncertainty, market barriers, financing barriers, and low renewables manufacturing capacity have been contributing to the sluggish development of renewables in Indonesia. Companies need to start thinking about a new inline vision and mission with energy transition mapping and also believe that the company must start thinking about a plan if fossil fuel is not the main choice in the community anymore are strongly agreed by the respondent. However respondent still optimistic on the company going concern because of the respondent believe The company is already

thinking about carbon emission reduction and believe on the ability of the company to discover new oil and gas reserves and will continue to carry out upstream activities taking into account the reduction of carbon emissions

3. What are the main findings on the change management model regarding the readiness of upstream personnel to face the energy transition?

Based on the research from IRENA skills on demand for energy transition dominated by engineering background, Therefore there are a requirement of engineering background in skillset required for Energy transition. On Annual report PHI 2019, the employee were dominated by engineering educational background by 79%, therefore PT PHI ready to face the energy transition, however to fulfill the gap between current skills and future skills there are requirement to do upskilling and and mentoring in the future. Based on ADKAR analysis Desire has a mean score 4.01, the score show that the employee or respondent has a big desire to change, The Personnel are ready for energy transition period, they not worried with energy transition period and they not worried for losing their job because of energy transition. Respondent want to be involved in the energy transition projects that owned by the company. Respondent want to be involved in formulating new strategy in facing the energy transition phase. However, with Knowledge part has a mean score 3.86 and reinforcement has a mean score 3.60 indicated that company can improve this score by : the company can provide training and also scholarship that will provide deeper understanding on the energy transition issues and just because respondent are excited to attend webinar and training. Employee must be equipped with the latest knowledge and information about energy transition, personnel mobility to the new and renewable affiliates will provide great experience to prepare the upstream employee to be ready for the Energy Transition Period.

Based on the conclusion above, the author would recommend some action to be done by the company in order to achieve personnel readiness in energy transition.

1. Companies need to start thinking about a new inline vision and mission with energy transition.

2. During the energy transition period company will continue to do an exploration and exploitation which put safety as top priority and continue to operate carbon emission reduction program in every E&P activites.

3. The company can provide training and also scholarship that will provide deeper understanding on the energy transition issues and just because respondent are excited to attend webinar and training. Employee must be equipped with the latest knowledge and information about energy transition.

4. Personnel mobility to the new and renewable affiliates will provide great experience to prepare the upstream employee to be ready for the Energy Transition Period.

The change management process can be done by formulating the strategic plan using Kotter Framework as shown in below table.

No	Step Title	Kotter Theory	Recommendation in PHI
1	Create Urgency	75% Company's management to support change	Conduct FGD in PT PHI to gather management current knowledge and to increase the awareness of energy transition
2	Create Guiding Coalition	Build the guiding team	Issue Task Force Memo based on FGD result consist of employee from multi division and multi background of education
3	Create a Vision	Guiding Team to create a clear vision and strategies for employee to understand the main goal of the change	The Task Force will formulate project goals and objectives and preparing business process flow and the timeline to make sure the project plan are well elaborate and decide the focus of the project
4	Communicate to buy-in	Employee to belief that useful change is mandatory and sacrifices is required	Create a campaign and socialization regarding the project through internal communication channel such as, email blast, internal web, internal social media, poster, banner, etc. ad create an involvement program to involve all employee can contribute to this project.
5	Remove Obstacle	Removal of obstacle. E.g. formal structure that make it difficult to act, lack of required skills that undermine action, system that make it difficult to response, and discourage action from leaders at implementing change	Preparing a mentoring or coaching for management level in order to create same perception regarding this energy transition project. Manager above will lead the team to identify obstacle and propose a solution to the task force. Approved solution should formulize into procedure, which can break the barrier.
6	Create short term wins	Need to prepare a process of producing short term or quick wins for the changes	Create KPI or select a champion program which reasonable and could fulfil by the team or by the company in short term. For example formulate new vision and mission which align to the position of the company in energy transition period

REFERENCES

1. Biro Pusat Statistik (2021), Berita Resmi Statistik – Pertumbuhan ekonomi Indonesia triwulan 1-2021. Jakarta : www.bps.go.id

2. Dewan Energy Nasional (2020), Indonesia Energy Outlook 2019. Jakarta : Sekretariat Jenderal Dewan Energy Nasional

3. Dewan Energy Nasional (2020), Bauran Energy Nasional 2020. Jakarta : Sekretariat Jenderal Dewan Energy Nasional

4. Ghozali, Imam, (2005), Aplikasi Analisis Multivariate Dengan Program SPSS , Semarang: Universitas Diponegoro, Semarang.

5. Hiatt, Jeffrey M. (2006), ADKAR: A Model for change

in Business, Government and Our Community. Prosci

6. IESR (2020), Kebutuhan Investasi Energi di Indonesia, Study Kasus : Rencana Umum Energi Nasional (RUEN), Jakarta : IESR

7. Jack fraenkel, norman wallen, helen hyun (2019), How to design and evaluate research in education 8th edition.- Mc. Graw Hill Irwin

8. Masri Singarimbun, Sofian Effendi (1989), Metode Penelitian Survai. Jakarta:LP3ES

9. PT. Pertamina Hulu Indonesia (2019), Annual Report.

10. PT. Pertamina Hulu Indonesia (2019), Sustainability Report.

11. Ross et al (2016), Corporate Finance 11th edition. Mc. Graw Hill Education.

12. Rothaermel, F.T (2016), Strategic Management : Concepts (Vol 2) Mc. Graw Hill Education.

13. Setiaji, Bambang. (2009), Jalan Mudah Ke Analisis Kuantitatif. Surakarta: Universitas Muhammadiyah Surakarta.

14. Sitinjak, Tumpal JR dan Sugiarto. (2006), LISREL Yogyakarta: Graha Ilmu.

15. Sugiyono. (2007), Metode Penelitian Pendidikan, Pendekatan Kuantitatif, Kualitatif, dan R & D. Bandung: Alfabeta.

16. Sumadi Suryabrata. (2010), Metode Penelitian. Jakarta: Rajagrafindo Persada.

17. World Bank (2020), Indonesia Economic Prospect, Towards a Secure and Fast Recovery, The World Bank, Report is available at www.worldbank.org/iep Research And Development Centre For Oil & Gas Technology Lemigas, Scientific Contributions Oil And Gas Vol. 40.

18. Angtyan, Hovhannes. (2019), ADKAR Model in Change Management: www.irmbrjournal.com.