READING

The world’s 750 million motor vehicles emit well over 900 million metric tonnes of carbon dioxide each year. Traffic-related air pollution has been responsible for 6% of deaths per year and is associated with certain forms of leukaemia, inflammatory lung diseases, increased cardio-vascular disease, low birth-weight babies and male infertility. It stands to reason that tackling traffic- related air pollution should be high on any government’s list of priorities. Thus, in an attempt to minimise this situation many governments around the world have been looking at ways to implement alternative fuel sources. The most widely accepted way of doing this is to replace the crude oil that our vehicles currently run on with renewable, ‘environmentally friendly’ One serious contender put forward as a solution to the pollution problem is ethanol.

Ethanol is a type of alcohol made by fermenting plant material. Water and organic matter from the plants including com, sorghum, sugar cane and wood are mixed together and fermented to make ethanol. After fermentation there are three layers remaining. The first is water and small particles of grain and alcohol. It takes on a syrup consistency. The second layer is the remaining grain, which is 17 per cent dry matter. The third layer is the actual ethanol – a colourless, volatile, flammable liquid. It is the only layer sold and accounts for exactly one-third of the total dry matter used for its production. There are three primary ways that it is used as a fuel for transportation: as a blend of 10 per cent ethanol with 90% unleaded fuel (E10); as a component of reformulated gasoline and; as a primary fuel with 85 parts of ethanol blended with 15 parts of unleaded fuel (E-85). In the 1800s in the USA, it was first used as lamp fuel. Later on, due to skyrocketing oil prices in the 1970s, E10 was produced as a type of ‘fuel-extender’ for vehicles with E-85 being produced in the 1990s. Brazil has also used ethanol-blended fuels. Like America, the high prices in the 1970s prompted a government mandate to produce vehicles which could be fuelled by pure ethanol Today there are more than 4,2 million ethanol- powered vehicles in Brazil (40 per cent passenger carrying) which consume 4 billion gallons of ethanol annually. Today, Brazil is the largest transportation ethanol fuel market in the world.

Given that Ethanol is made from a variety of plant substances when it is used in fuel production, it increases the monetary value of feed grains grown by farmers. In fact, in the USA, the largest ethanol consuming nation in the world, ethanol production adds £4.5 billion to the farm economy every year. According to the United States Department of Agriculture, ethanol production adds 30 cents to the value of a bushel of corn. Another of its benefits, according to Brian Keating, deputy chief of Australia’s Commonwealth Scientific and Industrial Research Organisation (CSIRO) is that a 10% ethanol blend (E10) would reduce greenhouse gas emissions by 2 to 5% over the full lifecycle of ethanol production and consumption. Said Keating, “The precise benefits depend on specific factors in the production cycle. An important component of which is the energy source used by the ethanol factory. If it’s being powered by coal or oil, there are obviously associated greenhouse gas emissions.” In America, The Clean Air Act of 1990 and the National Energy Policy Act of 1992 have both created new market opportunities for cleaner, more efficient fuels with many state governments in America’s Mid-west purchasing fleet vehicles capable of running on E-85 fuels.

Although it makes a good fuel, some drawbacks have been documented. The economics of ethanol production are improving as the technology improves but ethanol has two problems: It does not explode like gasoline, and it can absorb water, which can cause oxidation, rust and corrosion. The claims of possible damage to vehicles from the use of ethanol blends above 10% has therefore attracted considerable negative publicity. Compared to diesel – the standard fuel in the heavy moving industry – ethanol is known to have a lower energy content so ethanol trucks require larger fuel tanks to achieve the same range as a diesel-powered vehicle. In Australia, a government review’ into the impacts of a 20% ethanol blend on vehicles found the information to be insufficient or conflicting, but did identify a number of problems such as the possible perishing and swelling of elastomeric and plastic materials in fuel systems. Stakeholders in the motor vehicle industry have slated that warranties on motor vehicles and pump dispensing equipment could be at risk with the use of blends above 10% ethanol. Principle economist for the Australian Bureau of Agriculture Andrew Dickson points out that the money sugarcane growers get for their cane is not determined by the domestic consumption or domestic demand for ethanol, it is entirely determined by the world sugar market and the world trade in molasses He believes that the only way the sugar industry’ can benefit from the existence of an ethanol industry is if they invest in the ethanol industry. “The sugar producer does not get any more money for their molasses so what incentive do they have to produce any more?.” The cost of production also represents some challenges. In Australia, fuel ethanol costs around 70 cents per litre compared with around 35 cents per litre for unleaded petrol. In America, one report revealed that even with government assistance, ethanol is dose to 35 per cent more than the price of diesel. Consequently, production of ethanol requires government assistance to be competitive. A recent study by the Australian Bureau of Agricultural and Resource Economies found that without assistance, large-scale production of ethanol would not be commercially viable in Australia.

Regardless of whether the Australian sugar industry will benefit from a mandated 10% ethanol mix, the expansion of ethanol production would certainly lead to increased economic activity in farming areas. It is inevitable that some expansion would be at the expense of existing industry. If ethanol becomes more popular, there will soon be more plants producing it. This means there will be a need for workers for the plants. The American National Ethanol Vehicle Coalition (NBVC) projects that employment will be boosted by 200,000 jobs and the balance of trade will be improved by over $2 The future of ethanol looks promising, for better or worse ethanol looks to be a serious contender for tomorrow’s fuel.

Do the following statements agree with the claims of the writer in Reading Passage? (T, F, NS)

**1** The need to control air pollution is why ethanol came into use.

**2** Brazil uses more ethanol for transportation than America.

**3** Select food crops become more expensive due to ethanol production

**4** The Australian sugar industry will benefit from the production of ethanol.

**5** Primary ethanol (E-85) has been extensively tested in Australia.

Look at the following list of descriptions (Questions ***6-9***) and the list of fuel types below.

Match each description to the fuel type.

Write the correct letter***A-D*** in boxes ***6-9*** on your answer sheet.

**NB**     You may use any letter more than once.

**A**. regular gasoline

**B**. unleaded gasoline

**C**. ethanol

**D**. diesel

**6**. costs about half the price of ethanol

**7**. reacts poorly with some metals

**8**. is the reason why trucks have been fitted with larger fuel tanks

**9**. commonly used in the trucking industry lassify the following statements according to which country they apply to.

Write the appropriate letters ***A-D*** in boxes ***10-14***

**A**. Australia only

**B**. America only

**C**. both Australia and America

**D**. neither Australia nor America

**10**. makes ethanol out of sugar cane

**11**. uses more ethanol than any other country in the world

**12**. receives government assistance for ethanol production

**13**. proved ethanol production is costly

**14**. their government bought ethanol-friendly cars

READING

**14 pts**

Innovation is key to business survival，and companies put substantial resources into inspiring employees to develop new ideas. There are, nevertheless, people working in luxurious, state-of-the-art centres designed to stimulate innovation who find that their environment doesn’t make them feel at all creative. And there are those who don’t have a budget, or much space, but who innovate successfully.

For Robert B. Cialdini, Professor of Psychology at Arizona State University, one reason that companies don’t succeed as often as they should is that innovation starts with recruitment. Research shows that the fit between an employee’s values and a company’s values makes a difference to what contribution they make and whether, two years after they join, they’re still at the company. Studies at Harvard Business School show that, although some individuals may be more creative than others, almost every individual can be creative in the right circumstances.

One of the most famous photographs in the story of rock’n’roll emphasises Ciaidini’s views. The 1956 picture of singers Elvis Presley, Carl Perkins, Johnny Cash and Jerry Lee Lewis jamming at a piano in Sun Studios in Memphis tells a hidden story. Sun’s ‘million-dollar quartet’ could have been a quintet. Missing from the picture is Roy Orbison’ a greater natural singer than Lewis, Perkins or Cash. Sam Phillips, who owned Sun, wanted to revolutionise popular music with songs that fused black and white music, and country and blues. Presley, Cash, Perkins and Lewis instinctively understood Phillips’s ambition and believed in it. Orbison wasn’t inspired by the goal, and only ever achieved one hit with the Sun label.

The value fit matters, says Cialdini, because innovation is, in part, a process of change, and under that pressure we, as a species, behave differently, ‘When things change, we are hard-wired to play it safe.’ Managers should therefore adopt an approach that appears counterintuitive -they should explain what stands to be lost if the company fails to seize a particular opportunity. Studies show that we invariably take more gambles when threatened with a loss than when offered a reward.

Managing innovation is a delicate art. It’s easy for a company to be pulled in conflicting directions as the marketing, product development, and finance departments each get different feedback from different sets of people. And without a system which ensures collaborative exchanges within the company, it’s also easy for small ‘pockets of innovation‟ to disappear. Innovation is a contact sport. You can’t brief people just by saying, ‘We’re going in this direction and I’m going to take you with me.’

Cialdini believes that this ‘follow-the-leader syndrome, is dangerous, not least because it encourages bosses to go it alone. ‘It’s been scientifically proven that three people will be better than one at solving problems, even if that one person is the smartest person in the field.’ To prove his point, Cialdini cites an interview with molecular biologist James Watson. Watson, together with Francis Crick, discovered the structure of DNA, the genetic information carrier of all living organisms. ‘When asked how they had cracked the code ahead of an array of highly accomplished rival investigators, he said something that stunned me. He said ”he and Crick had succeeded because they were aware that they weren’t the most intelligent of the scientists pursuing the answer. The smartest scientist was called Rosalind Franklin who, Watson said, “was so intelligent she rarely sought advice”.’

Teamwork taps into one of the basic drivers of human behaviour. ‘The principle of social proof is so pervasive that we don’t even recognise it,’ says Cialdini. ‘If your project is being resisted, for example, by a group of veteran employees, ask another old-timer to speak up for it.’ Cialdini is not alone in advocating this strategy. Research shows that peer power, used horizontally not vertically, is much more powerful than any boss’s speech.

Writing, visualising and prototyping can stimulate the flow of new ideas. Cialdini cites scores of research papers and historical events that prove that even something as simple as writing deepens every individual’s engagement in the project. It is, he says, the reason why all those competitions on breakfast cereal packets encouraged us to write in saying, in no more than 10 words: ‘I like Kellogg’s Com Flakes because… .’ The very act of writing makes us more likely to believe it.

Authority doesn’t have to inhibit innovation but it often does. The wrong kind of leadership will lead to what Cialdini calls ”captainitis, the regrettable tendency of team members to opt out of team responsibilities that are properly their’. He calls it captainitis because, he says, ”crew members of multipilot aircraft exhibit a sometimes deadly passivity when the flight captain makes a clearly wrong-headed decision”. This behaviour is not, he says, unique to air travel, but can happen in any workplace where the leader is overbearing.

At the other end of the scale is the 1980s Memphis design collective, a group of young designers for whom ”the only rule was that there were no rule”. This environment encouraged a free interchange of ideas, which led to more creativity with form, function, colour and materials that revolutionised attitudes to furniture design.

Many theorists believe the ideal boss should lead from behind, taking pride in collective accomplishment and giving credit where it is due. Cialdini says:”Leaders should encourage everyone to contribute and simultaneously assure all concerned that every recommendation is important to making the right decision and will be given full attention” The frustrating thing about innovation is that there are many approaches, but no magic formula. However, a manager who wants to create a truly innovative culture can make their job a lot easier by recognising these psychological realities.

*Choose the correct letter,****A, B, C****or****D****.*

**1.** The example of the ‘million-dollar quartet’ underlines the writer’s point about

**A**  recognising talent.

**B**  working as a team.

**C**  having a shared objective.

**D**  being an effective leader.

**2.** James Watson suggests that he and Francis Crick won the race to discover the DNA code because they

**A**  were conscious of their own limitations.

**B**  brought complementary skills to their partnership.

**C**  were determined to outperform their brighter rivals.

**D**  encouraged each other to realise their joint ambition.

**3.** The writer mentions competitions on breakfast cereal packets as an example of how to

**A**  inspire creative thinking.

**B**  generate concise writing.

**C**  promote loyalty to a group.

**D**  strengthen commitment to an idea.

**4.** In the last paragraph, the writer suggests that it is important for employees to

**A**  be aware of their company's goals.

**B**  feel that their contributions are valued.

**C**  have respect for their co-workers‟ achievements.

**D**  understand why certain management decisions are made.

Complete each sentence with the correct ending, ***A-G***, below.

**5.** Employees whose values match those of their employers are more likely to **…………………………..**

**6**. At times of change, people tend to **…………………………..**

**7**. If people are aware of what they might lose, they will often**…………………………..**

**8.** People working under a dominant boss are liable to **…………………………..**

**9.** Employees working in organisations with few rules are more likely to  **………………………….**

**A** take chances.  
  
**B** share their ideas.  
  
**C** become competitive.  
  
**D** get promotion.  
  
**E** avoid risk.  
  
**F** ignore their duties.

**G** remain in their jobs.

Do the following statements agree with the claims of the writer in Reading Passage? Put T, F or NS

**10** The physical surroundings in which a person works play a key role in determining their creativity.

**11** Most people have the potential to be creative.

**12** Teams work best when their members are of equally matched intelligence.

**13** It is easier for smaller companies to be innovative.

**14** A manager’s approval of an idea is more persuasive than that of a colleague.