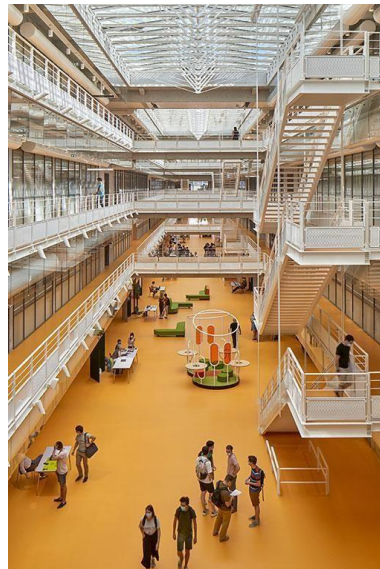


BCPST 2026
Épreuve écrite de langue vivante
Réforme & Sujet zéro



BCPST 2026
Épreuve écrite de langue vivante
Réforme & Sujet zéro

Index

pg. 3 réforme
pg. 4 sujet-zéro 1
pg. 9 archives sujets 2021, 2022, 2023

Réforme

En 2026, l'épreuve de langue vivante du concours BCPST pour les écoles ENS Paris, ENS de Lyon, ENS Paris-Saclay, l'ENPC et les Mines, changera. En 2025, le format pratiqué jusque-là sera maintenu une année supplémentaire avant le passage à la nouvelle formule.

Ancien format

Une épreuve de deux heures.

Un texte d'environ 500 mots, à partir duquel :

1. Les candidats et candidates produisent une version intégrale (/12 points).
2. Les candidats et candidates répondent à une question de compréhension (/4).
3. Les candidats et candidates répondent à une question de rédaction autour du thème (/4).

Nouveau format

Une épreuve de trois heures.

Un dossier autour d'un thème comprenant trois documents :

- un article de presse générale (une page, 490 à 510 mots),
- un article de presse semi-spécialisée (une page, 490 à 510 mots),
- un document visuel.

Modalités d'évaluation :

1. Une question invitant les candidats et candidates à produire une synthèse sur le dossier étudié (/8 points).
2. Une question d'expression écrite pour des commentaires plus personnels, invitant à l'expression d'un point de vue sur le thème général du dossier (/8 points).
3. Une traduction de 45 à 55 mots (/4 points).

Finalités

1. Une épreuve correspondant davantage aux compétences nécessaires à l'emploi de l'anglais dans le cadre des études et des carrières permises par la réussite au concours BCPST.
2. Une évaluation faisant une part plus grande à la qualité d'expression en anglais
3. Un format plus stimulant pour les candidats.

Consignes pédagogiques

1. L'exercice de synthèse requiert que les candidats et candidates soient capables d'identifier les éléments importants présents dans chaque document et d'organiser ces informations de façon claire et logique. Pour comprendre au mieux les documents, il est nécessaire de se tenir au courant de l'actualité au sein du monde anglophone. L'objectif de cet exercice est qu'une personne n'ayant pas pris connaissance des documents puisse se faire sa propre opinion. Les candidats et candidates ne doivent donc pas introduire de commentaires personnels ou des éléments extérieurs aux documents.

La structure attendue est la suivante : titre, introduction, développement structuré et conclusion.

2. L'exercice d'expression personnelle est l'opportunité d'exprimer une opinion personnelle, étayée par des connaissances personnelles en lien avec le sujet. Il est attendu de cette production qu'elle soit organisée et clairement structurée. Cet exercice permet également d'évaluer la maîtrise d'expressions idiomatiques et appropriées à un cadre professionnel.
3. L'exercice de traduction nécessite que priorité soit donnée à l'exactitude du sens, davantage qu'à la contrainte que serait un calque de la syntaxe anglophone.

Le sujet zéro fourni est un sujet d'anglais, mais cette réforme concerne toutes les langues vivantes (anglais, allemand, espagnol).

Energy Planning in the United States

Doc. 1

The New York Times - June 29th 2024

<https://www.nytimes.com/2024/06/29/climate/supreme-court-epa.html>

A String of Supreme Court Decisions Hits Hard at Environmental Rules

Four cases backed by conservative activists in recent years have combined to diminish the power of the Environmental Protection Agency.

A spate of decisions over the past two years by the Supreme Court has significantly impaired the Environmental Protection Agency's authority to limit pollution in the air and water, regulate the use of toxic chemicals and reduce the greenhouse gases that are heating the planet. This term, the court's conservative supermajority handed down several rulings that chip away at the power of many federal agencies. But the environmental agency has been under particular fire, the result of a series of cases brought since 2022 by conservative activists who say that E.P.A. regulations have driven up costs for industries ranging from electric utilities to home building. Those arguments have resonated among justices skeptical of government regulation. (...)

"This court has shown an interest in making law in this area and not having the patience to wait for the cases to first come up through the courts," said Kevin Minoli, a lawyer who worked in the E.P.A.'s office of general counsel from the Clinton through the Trump administrations. "They've been aggressive on ruling. It's like, we're going to tell you the answer before you even ask the question." Collectively, those decisions now endanger not only many existing environmental rules, but may prevent future administrations from writing new ones, experts say. "These are among the worst environmental law rulings that the Supreme Court will ever issue," said Ian Fein, a senior attorney with the Natural Resources Defense Council, an advocacy group. "They all cut sharply against the federal government's ability to enforce laws that protect us from polluters." (...)

President Biden has pledged that the United States will cut its carbon dioxide pollution in half by 2030 and eliminate it by 2050, which scientists say all major economies must do if the world is to avoid the most deadly and costly impacts of climate change. This year, the E.P.A. has rushed to finalize new rules to slash pollution from cars, trucks, power plants and methane leaks from oil and gas wells. If he wins a second term, Mr. Biden wants to cut emissions from steel, cement and other heavy industries that have never been required to reduce their planet-warming emissions. But the string of recent losses before the Supreme Court could make it difficult for the E.P.A. to follow through on those plans. (...)

The nation's bedrock environmental laws, the Clean Air Act and the Clean Water Act, were both written more than 50 years ago, before the effects of climate change and a global economy that has reshaped the environmental and economic landscape. Since then, Congress has passed one major law to address climate change, the 2022 Inflation Reduction Act. It includes more than \$370 billion in incentives for clean energy technologies, including wind and solar power and electric vehicles. Climate experts call it a strong first step in cutting the nation's emissions, but say that far more is needed to eliminate them entirely in the next 25 years. (...)

Doc. 2

Scientific American - April 23rd 2023

<https://www.scientificamerican.com/article/renewable-energy-is-charging-ahead/>

Renewable Energy Is Charging Ahead

Renewable energy has seen considerable growth in recent years, but there is a long way to go to achieve a clean energy future that averts the worst effects of the climate crisis

Humanity is at a crossroads in choosing the way we will power our future. Depending on what electricity infrastructure we build, we could lock in still more decades of planet-warming emissions, or we could lay a solid foundation for a clean energy future and stave off the climate emergency's worst effects. The choice is an urgent one because the window is quickly closing on our ability to meet the goal of the 2015 Paris climate agreement: keeping global temperature rise well below two degrees Celsius by the end of the century. The latest report from the Intergovernmental Panel on Climate Change (IPCC) stressed that the world needs fast and deep emissions cuts to meet that goal and eventually reach net zero emissions by 2050. Switching to renewable forms of power generation, such as solar, wind and hydropower, will be a key component of that effort. (...)

Globally, renewables account for about one third of electricity generation—and that share is rising. Renewables accounted for more than 80 percent of all added power capacity last year, according to the International Renewable Energy Agency (IRENA). Last year renewables produced more electricity than coal-powered plants for the first time in the U.S. Wind and solar now produce about 14 percent of the country's electricity, up from virtually nothing just 25 years ago. (...) The main reason renewable energy has grown so much in recent years is a dramatic decline in the expense of generating solar and wind power. The cost of solar photovoltaic cells has dropped a stunning 90 percent over the past decade. (...)

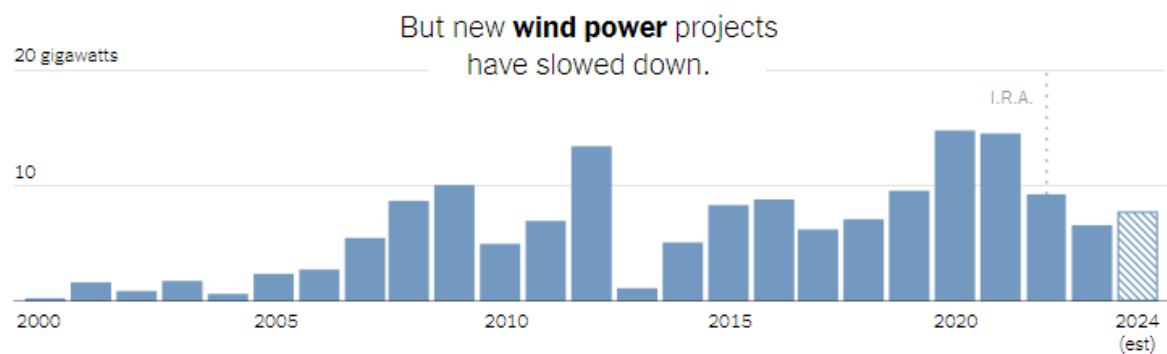
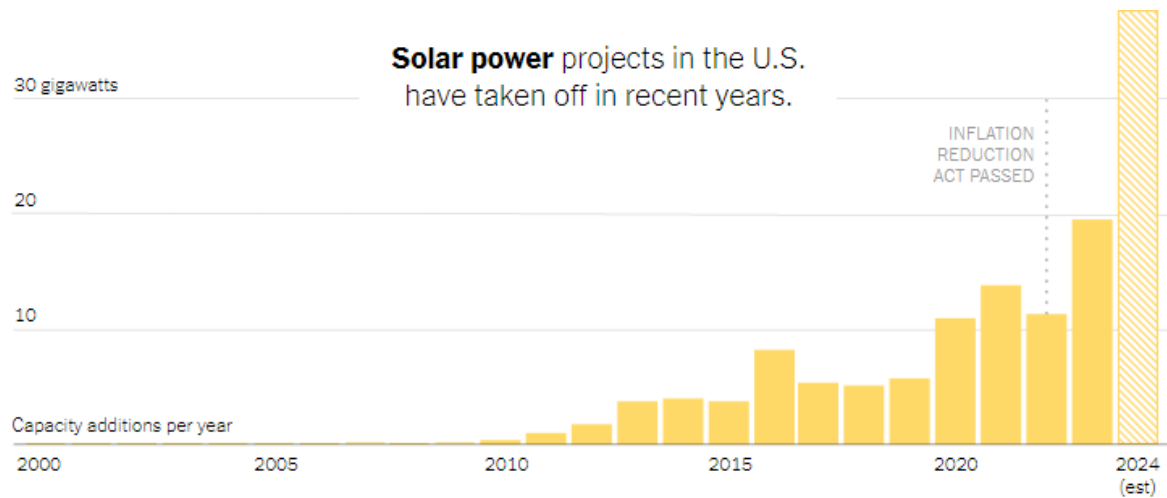
But the current rate of renewable adoption is still far below what is needed to meet climate goals. Though global renewables capacity grew by 9.6 percent last year, IRENA says the capacity needs to grow at triple that rate to meet the Paris climate goals. And as other sectors such as manufacturing and transportation decarbonize, electricity needs will only increase. There are obstacles to accelerating the rate of adopting renewables, though. For one, solar and wind are intermittent power sources, meaning they need to be deployed with batteries or other types of energy storage. Photovoltaic cells, as well as the lithium-ion batteries that are today's key storage technology, also require critical (and sometimes relatively rare) minerals to produce them.(...)

Financing is also an issue. Even though the overall costs of renewables have come down, "you need to invest everything upfront," Bahar says, "which means that financing cost and risk management is extremely important." Financing is particularly an issue in the equitable deployment of renewables. The U.S., Europe, India and China account for 80 percent of new renewables capacity. And "85 percent of investments in renewables has benefitted only 50 percent of the global population," primarily in the world's largest economies, says Roland Roesch, acting director of IRENA's Innovation and Technology Center. He adds that multinational development banks (a key funding source for projects in developing countries) must support developing countries in adopting renewable projects. "The last mile of net zero is the most difficult one," Bahar says. "So it has to include everybody."

Doc. 3

The New York Times - June 4th 2024

<https://www.nytimes.com/interactive/2024/06/04/climate/us-wind-energy-solar-power.html>



Source: U.S. Energy Information Administration - Notes: Annual utility-scale power capacity additions are shown. Estimates for 2024 include projects scheduled to come online this year.

Questions

Synthèse de documents (/8) (250 mots, +/- 10%)

Using the provided documents, analyze how recent legal and policy changes in environmental regulation and renewable energy reflect broader climate change challenges, goals, and strategies. Refer to the documents as doc. 1, doc. 2, and doc. 3.

Expression écrite (/8) (250 mots, +/- 10%)

Does it look to you like there are reasons to be hopeful or pessimistic? Is the United States on a path to a cleaner future? Feel free to share any insight or information you believe is relevant.

Traduction (/4)

"Humanity is at a crossroads in choosing the way we will power our future. Depending on what electricity infrastructure we build now, we could lock in still more decades of planet-warming emissions, or we could lay a solid foundation for a clean energy future and stave off the climate emergency's worst effects."

Sujet 2021

ANGLAIS - Ecrit ***Sujet 2021***

Version (12 points)

Recent research has established a bidirectional causal relationship between poverty and mental illness. Researchers have begun to isolate the underlying mechanisms, which can guide effective policies to protect the mental health of those living in poverty. We now know that loss of income causes mental illness. Negative income shocks, such as bad harvests due to poor rainfall or job losses due to factory closures, worsen mental health. Conversely, cash transfers and broader antipoverty programs reduce depression and anxiety in randomized trials. Multiple mechanisms mediate this causal chain. Poverty is associated with volatile income and expenditures. The resulting worries and uncertainty can worsen mental health. Providing health, employment, or weather insurance, or other ways of smoothing shocks, may thus lower depression and anxiety. Living in inadequate housing in low-income neighborhoods, the poor are also more exposed to environmental stresses such as pollution, temperature extremes, and challenging sleep environments, which can cause mental illness. Early-life conditions—poverty experienced in childhood and in utero—increase the likelihood of poor nutrition and other stressors, resulting in impaired cognitive development and adult mental illness. This makes a strong case for providing financial support to pregnant women and caregivers of young children. Poverty is also associated with worse physical health; greater exposure to trauma, violence, and crime; and lower social status, each of which may affect mental health. Mental illness in turn worsens economic outcomes for individuals. Studies show that randomized interventions to treat mental illnesses increase days worked. Depression and anxiety directly affect the way people think, by capturing their attention and distorting their memory. Such effects are likely to influence economic preferences and beliefs and thus distort important economic decisions made by individuals, such as how much to work, invest, and consume. Reduced concentration and greater fatigue reduce work productivity, and the social stigma of mental illness may further worsen labor-market outcomes.

Poverty, depression, and anxiety: Causal evidence and mechanisms, Science Magazine, Matthew Ridley, Gautam Rao, Frank Schilbach, Vikram Patel, Dec. 11, 2020

Questions (8 points, 100 mots par question minimum)

Why is poverty “likely to influence economic preferences and beliefs and thus distort important economic decisions”?

To what extent can we break that cycle of social determinism?

Sujet 2022

ANGLAIS

I. VERSION (12 points)

Elizabeth Holmes, the founder of the failed blood testing start-up Theranos, was found guilty of four of eleven charges of fraud on Monday, in a case that came to symbolize the pitfalls of Silicon Valley's culture of hustle, hype and greed.

Ms. Holmes, who had once promised to revolutionize health care, was the most prominent executive to field fraud accusations in a generation of high-flying, money-losing start-ups. A jury of eight men and four women took fifty hours over seven days of deliberations to reach a verdict, convicting her of three counts of wire fraud by lying to investors to raise money for her company.

Stephanie Hinds, a U.S. attorney, said in a statement that the guilty verdicts reflected Ms. Holmes's "culpability in this large-scale investor fraud." The verdict stands out for its rarity. Few technology executives are charged with fraud and even fewer are convicted. While the verdict was read, Ms. Holmes — who had falsely claimed that Theranos's blood tests could detect a variety of ailments with just a few drops of blood — sat motionless.

"Ms. Holmes's conviction sends a message to other executives to be careful about their statements to investors and the public", said Jessica Roth, a law professor at Cardozo School of Law. It "shines a light on the importance of drawing a distinction between truth and optimistic projections — and keeping that clear in one's mind," she said.

Holmes said she believed that Theranos's tests worked and had relied on the expertise of more qualified people running the company's lab. And she used her charisma to sell jurors on the same vision of the future that, years earlier, had helped her win over investors, world leaders and the press. "I wanted to talk about what this company could do a year from now, five years from now, ten years from now," Ms. Holmes said. "I wanted to talk about what was possible."

Ms. Holmes left the courthouse after dark on Monday, holding hands with her mother and partner. As reporters shouted questions, Ms. Holmes avoided eye contact and stared straight ahead.

Adapted from *Elizabeth Holmes is found guilty of four counts of fraud*, by Erin Griffin and Erin Woo, in the *New York Times*, Jan. 4, 2022, Section A, Page 1.

II. QUESTIONS (8 points, minimum de 100 mots par question)

1. What does Jessica Roth mean when she argues that it is important to draw "a distinction between truth and optimistic projections"?
2. Are you confident that biotechnological companies can compete in the modern-day marketplace without exaggerating their achievements?

Sujet 2023

ANGLAIS

I. VERSION (12 points, titre à traduire également)

What ChatGPT and generative AI mean for science

Researchers are excited but apprehensive about the latest advances in artificial intelligence.

In December, computational biologists Casey Greene and Milton Pividori embarked on an unusual experiment: they asked an assistant who was not a scientist to help them improve three of their research papers. Their assiduous aide suggested revisions to sections of documents in seconds; each manuscript took about five minutes to review. In one biology manuscript, their helper even spotted a mistake in a reference to an equation. The trial didn't always run smoothly, but the final manuscripts were easier to read — and the fees were modest, at less than US\$0.50 per document.

This assistant is not a person but an artificial-intelligence algorithm called GPT-3, first released in 2020. It is one of the much-hyped generative AI chatbot-style tools that can churn out convincingly fluent text, whether asked to produce prose, poetry, computer code or to edit research papers. The most famous of these tools, also known as large language models, or LLMs, is ChatGPT, a version of GPT-3 that shot to fame after its release in November last year because it was made free and easily accessible. "I'm really impressed," says Pividori, who works at the University of Pennsylvania in Philadelphia. "This will help us be more productive as researchers."

But researchers emphasize that LLMs are fundamentally unreliable at answering questions, sometimes generating false responses. ChatGPT and its competitors work by learning the statistical patterns of language in enormous databases of online text — including any untruths, biases or outmoded knowledge. When LLMs are then given prompts, they simply spit out, word by word, any way to continue the conversation that seems stylistically plausible.

The result is that LLMs easily produce errors and misleading information, particularly for technical topics that they might have had little data to train on. LLMs also can't show the origins of their information; if asked to write an academic paper, they make up fictitious citations. "The tool cannot be trusted to get facts right or produce reliable references," noted a January editorial on ChatGPT in the journal *Nature Machine Intelligence*. With these caveats, ChatGPT and other LLMs can be effective assistants for researchers who have enough expertise to directly spot problems or to easily verify answers. But the tools might mislead naive users. (...)

Adapted from *Nature*, Vol 614, 9th of February 2023, Pages 214-216.

<https://www.nature.com/articles/d41586-023-00340-6>

II. QUESTIONS (8 points, minimum de 100 mots par question)

1. What are reasons why Large Language Models fail to be perfectly accurate?
2. Do you believe that artificial intelligence will revolutionize scientific work? How do you envision responsibilities to be shared between human and machine?

Sujet 2024

ANGLAIS

I. VERSION (12 points, titre à traduire également)

My lab work generated lots of waste. Here's how we reduced our footprint.

I went into our lab meeting feeling dejected. For months, I had been trying to recycle some of our lab's plastic waste into 3D-printed lab tools, but it wasn't going well. "I've only been able to print three small items," I told my colleagues. They knew how committed I was to reducing the environmental footprint of our research. So one asked, "Maybe we should be thinking about how we can avoid having so much plastic waste in the first place?" Another chimed in: "Could we figure out how much energy we are consuming and how to reduce that?" Their questions buoyed my spirits—and led to a series of changes in how we operate in the lab.

When I started my Ph.D., I knew my work in cancer research was generating a lot of waste, but I had accepted it as a necessary evil. That all changed one day when I saw a huge pile of plastic waste—pipette boxes, tubes, packaging—stacked against the wall. Until then, the lab had operated at a reduced capacity because of the COVID-19 pandemic. But as we ramped up our research and returned to full capacity, our waste production skyrocketed visibly. (...)

We decided to create a group dedicated to pushing for "greener" ways to operate, inviting researchers in other labs at our institution as well as our own. Many of my colleagues, including Ph.D. students, lab technicians, and principal investigators, were eager to join. We began meeting monthly to come up with solutions.

Over the following months, we launched a series of initiatives that we feel have made a difference. We introduced new recycling bins to each lab after learning that some of our plastic waste could be recycled if it was sorted properly. We took a hard look at our lab protocols to devise ways to reduce our use of plastic items. (...)

I encourage scientists everywhere to think about ways to reduce the environmental impact of their own research. The work we do is important. But we should also do our part to be as sustainable as we can. After all, what significance does our science hold if, ultimately, there remains no viable planet we can call our home?

Adapted from *Science*, Vol 383, Issue 6680.

<https://www.science.org/content/article/my-lab-work-generated-lots-waste-here-s-how-we-reduced-our-footprint>

II. QUESTIONS (8 points, minimum de 100 mots par question)

1. The author of the article wanted to initiate change. Were his colleagues reluctant?
2. Do you believe that focusing on our own environmental impact as individuals is one of the best ways to address the climate crisis?